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INFLUENZA MORTALITY AMONG WAGE EARNERS AND THEIR FAMILIES.

A PRELIMINARY STATEMENT OF RESULTS.

LEE K. FRANKEL, PH. D.,
3rd Vice-President
AND
LOUIS I. DUBLIN, PH. D.,
Statistician,
Metropolitan Life Insurance Company, New York City.

Whites rather than colored people were attacked by the pandemic of influenza and the young rather than the old, a reversal of usual conditions. These conclusions are based on the accurate figures obtainable from 12,000,000 policies and 105,552 claims. : : :

THE following is a brief statement of some of the basic findings of an investigation which has been made into the epidemic of influenza. It is limited to the policyholders of the Industrial Department of the Metropolitan Life Insurance Company and covers the period from October 1, 1918 to June 30, 1919. It should be noted in this connection that in this department there are represented over 12,000,000 policyholders, as of December 31, 1918; that these policyholders include both races, white and colored, males as well as females, and all age periods, excepting early infancy and extreme old age. This group of insured wage earners is well distributed over the entire United States and Canada. Effort was made, furthermore, to make the record of influenza deaths as complete as possible. In all, 105,552 policy claims were paid during the period under investigation, representing a total of 70,729 deaths from influenza-pneumonia.* It will be seen from these considerations that the results of this study should be generally applicable to the working population of the United States. Only crude descriptive data are given and no attempt will be made to give results which depend upon refined statistical analysis. Such work is still being carried on and will be reported on in a later and fuller statement.

*Includes all deaths classified as "influenza" (10), "broncho-pneumonia" (91), and "pneumonia-lobar and undefined" (92). The numbers refer to titles of the International List of Causes of Death.

The 70,729 deaths included in this study were largely concentrated during the first three months, namely, October, November, and December of 1918. In fact, slightly more than three fourths of all the deaths from influenza-pneumonia in the nine months under observation occurred in these three months. The month of October alone showed 34,471 deaths or nearly one half of all the deaths in the entire period. In this epidemic, there was no clearly defined preparatory period leading up to the month of greatest incidence. The following table shows the percentage distribution of the deaths according to single months, and by quarters:

TABLE 1.

ACTUAL AND CUMULATIVE NUMBER OF DEATHS FROM INFLUENZA-PNEUMONIA, DURING EACH CALENDAR MONTH, OCTOBER, 1918 TO JUNE, 1919.

Actual and Cumulative Percentage in Each Month of Total in Period.

Period	Number	Percentage	Cumulative number	Cumulative percentage
October, 1918 to June, 1919	70,729	100.0	70,729	100.0
By month:				
October	34,471	48.7	34,471	48.7
November	10,506	14.9	44,977	63.6
December	8,227	11.6	53,204	75.2
January	6,724	9.5	59,928	84.7
February	3,925	5.6	63,853	90.3
March	3,677	5.2	67,530	95.5
April	1,829	2.6	69,359	98.1
May	1,058	1.5	70,417	99.6
June	312	.4	70,729	100.0
By quarter:				
Oct. to Dec., 1918	53,204	75.2	53,204	75.2
Jan. to Mar., 1919	14,326	20.3	67,530	95.5
Apr. to June, 1919	3,199	4.5	70,729	100.0

It will be seen that the epidemic was virtually over by the end of March. A few thousand deaths occurred in the last quarter, April to June, but not to an excessive degree when it is remembered that there are always deaths from these causes at this time of the year, especially in April. It will be desirable, therefore, to call attention to the facts by quarterly periods, remembering that the first quarter from October to December represented the period of severest incidence, the second quarter from January to March, the period of secondary recurrences and the third quarter, April to June, the return toward the usual low rates of the late spring and early summer months.

DEATH RATE FROM INFLUENZA-PNEUMONIA.

When related to the number of years of life exposed, these deaths indicate a rate of 774 per 100,000 during the nine months' period. This is an annual rate; that is, it is what the rate would have been if the experience had continued for a full year. In October, the death rate was 3,395 per 100,000; in November, 1,035, the figures declining rapidly thereafter, with a slight halt, however, in the months of February and March. The month of March is a high influenza-pneumonia month in any year. As against these rates for the epidemic period, there was a rate of 152 per 100,000 during the twelve months ending September 30, 1918. The difference between 774 and 152 per 100,000, namely, 622 is an approximate measure of the effect of the epidemic. The year 1918, prior to the epidemic, was already significantly affected with mortality from respiratory disease, especially during March and April, when high death rates prevailed. During the period 1911 to 1917, considering these seven years as a *norm*, there was an annual influenza-pneumonia rate of 125 per 100,000.

On the basis of the rate for the year ending September, 1918, there would have been only 13,891 deaths as against the 70,729 that actually occurred.

Table 2 presents the rates by months and by quarters for the entire experience, as well as for white and col-

ored lives and for each sex group separately:

TABLE 2.

DEATH RATE PER 100,000 YEARS OF LIFE IN EACH MONTH, AND BY QUARTERS, OCTOBER, 1918 TO JUNE, 1919.

Classified by color and by sex.

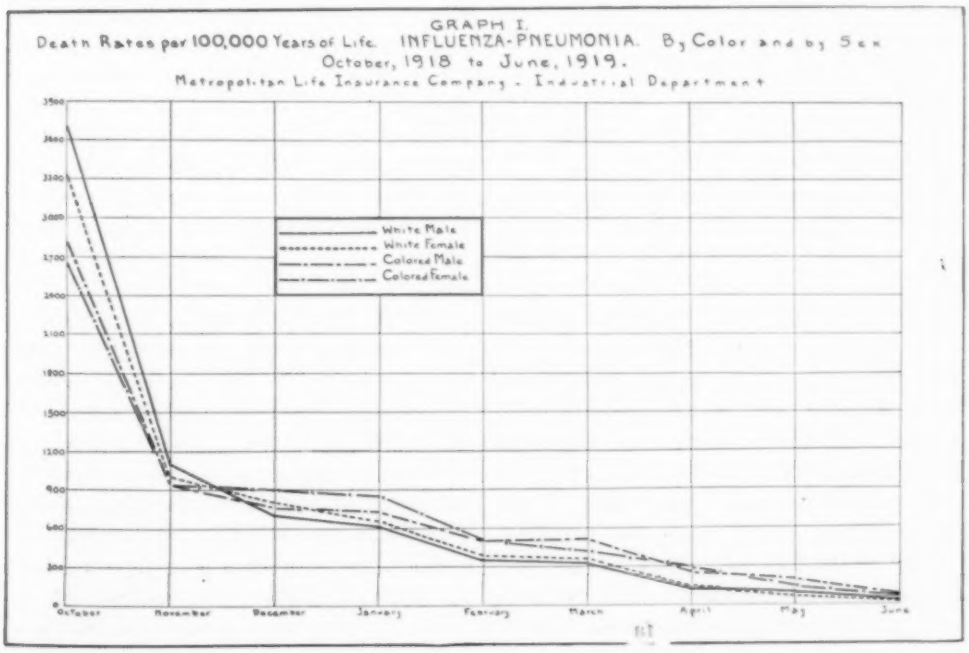
Period	Death rate per 100,000 years of life				
	Total	White		Colored	
		Males	Females	Males	Females
October, 1918 to June, 1919	774	789	763	767	767
By months:					
October....	3,395	3,674	3,325	2,816	2,664
November .	1,035	1,091	1,010	944	945
December .	810	768	833	807	902
January ...	662	607	672	741	869
February ..	387	354	382	515	517
March	362	325	358	528	488
April.....	167	160	169	288	297
May.....	104	97	89	204	182
June.....	31	29	28	60	42
By quarters:					
Oct. to Dec.	1,747	1,844	1,723	1,522	1,504
Jan. to Mar.	470	428	471	594	625
Apr. to June	105	95	95	184	174
"*Norm*" periods					
Oct., 1917 to Sept. 1918	152	164	116	316	215
Total, 1911 to 1917	125	126	107	217	167

Graph I illustrates these data.

SEX, COLOR AND AGE INCIDENCE OF INFLUENZA-PNEUMONIA.

The chief interest in the statistics of the influenza epidemic must center for some time around the relative incidence of the deaths in the sex, color and age groups of the population. Such statistics, if authoritative, throw light on the natural history of the disease, indicating to the epidemiologist where its invasion was most or least disastrous and where he may concentrate his research. To the public health officer and to the medical profession generally, these data will indicate, perhaps, where forces for the control of this disease should be concentrated.

In view of the importance of these practical bearings, it will be necessary, of course, that such figures describing the relation between the disease and groups of the population be consistent, not only for the various phases of the epidemic, but for the different parts of



the country where the epidemic occurred. This is assured by the uniform methods of classification employed, and by the special efforts which were made to have these statistics as accurate as possible. We shall discuss the relations between these data for sex, color and age in this order.

Sex-Incidence of Influenza-Pneumonia Mortality.

The respiratory diseases, including influenza-pneumonia, under normal conditions, show a higher mortality incidence among males than among females. In the seven year period from 1911 to 1917, the mortality rate showed an excess of 18 per cent, males over females, among white lives and of 30 per cent among colored lives. This then is the background against which the figures for the epidemic must be thrown. We find that for the entire period from October, 1918 to June, 1919, the rates for males and females, respectively, were 789 and 763 among white lives and 767 for both males and females among colored lives. In other words, the excess of males over females among the whites was only 3 per cent, and there was no excess at all among colored lives. These figures are shown in Table 2.

This would seem to indicate, therefore, that the effect of the epidemic was not much (if any) greater on males than on females. In fact, once we pass the crest of the epidemic, we find in the quarter from January to March, 1919, that the death rates for males are even lower than for females. There is, altogether, a suggestion that the excess mortality caused by the epidemic did not operate on the sexes as the normal mortality from influenza-pneumonia had in previous years. This fact of excess respiratory disease among females is in itself one well worthy of more intensive study, especially, when it is remembered, that a considerable number of deaths of females were assigned to the puerperal causes which were undoubtedly complicated by attacks of influenza, although not so certified by physicians. The following table summarizes the facts with reference to sex-ratios in the two main color groups and by quarterly periods:

TABLE 3.

Percentage, Male or Female Death Rate—Influenza-Pneumonia.

Classified by quarterly periods, October, 1918 to June, 1919,

Period	White	Colored
October, 1918 to June, 1919	103	100
October to December	107	101
January to March	91	95
April to June	100	106
Norm:		
October, 1917 to Sept., 1918	141	147
Total, 1911 to 1917	118	130

Color or Race Incidence of Influenza-Pneumonia Mortality.

The second consideration is with reference to color. In this connection, a very clear picture is presented. Normally, the respiratory diseases are much more highly represented among colored persons than among whites, and this applies to both sexes. Thus, in the seven year period, from 1911 to 1917, influenza-pneumonia showed an excess of 72 per cent colored males over white males, and of 56 per cent colored females over white females. But, during the period of the epidemic, the situation was reversed. The whites suffered from higher rates than the colored. This is clearly shown during the first three months of the epidemic, when colored males showed a rate of 1,522 per 100,000, as compared with a rate of 1,844 per 100,000 for white males. The same condition is shown among females, the colored rate being 1,504 and the white rate, 1,723. Put in other words, while the rate among white males dur-

ing this period, October to December, was nearly fifteen times as great as during the period 1911 to 1917, that of colored males was only seven times as great as the rate during the same seven year period. White females during the height of the epidemic showed a rate more than sixteen times as high as the normal, while colored females experienced a rate only nine times as high. After the first of January, 1919, that is, after the severest period of the epidemic had passed, the colored group showed higher rates than the white, and the amount of excess approximated what had prevailed in normal times, as the distance from the explosive period of the epidemic increased. In the last quarter, April to June, the excess of colored males over white males was 94 per cent and of colored females over white females, 83 per cent, figures which are almost identical with those for the twelve months ending September 30, 1918. The facts indicate with great clearness that the effect of the epidemic was much greater among white lives than among colored lives. This difference wore off as the epidemic waned and conditions returned to normal, as they virtually did during the last quarter of this period, from April to June, when a marked excess of colored mortality is shown over white mortality. The following table gives the relation of colored to white mortality by quarters for each of the two sexes:

TABLE 4.

PERCENTAGE, COLORED OF WHITE INFLUENZA-PNEUMONIA DEATH RATE.

Classified by sex and by quarters, October, 1918 to June, 1919.

Period	Percentage colored of white	
	Male	Female
October, 1918 to June, 1919	97	101
October to December	83	87
January to March	139	133
April to June	194	183
Norm:		
October, 1917 to Sept. 1918	193	185
Total, 1911 to 1917	172	156

AGE INCIDENCE OF INFLUENZA-PNEUMONIA MORTALITY.

It is when we consider the facts for age that the most instructive relations with reference to the influenza-pneumonia epidemic are brought out. We shall find that during the period of the attack, the disease affected the population in a manner distinctively its own, and this is quite different from that in which the diseases known as influenza and pneumonia affect the community at large during non-epidemic periods. During normal times, as indicated by the facts for the seven year period from 1911 to 1917, we find that influenza-pneumonia affects primarily the first age period of life, ages one to four years, and the period of late middle life and old age. The rates are normally minimal between 5 and 30 years. The picture of the pandemic by age groups shows three modal points instead of two. In fact, the highest rate among the whites is in the period of early adult life, namely, between 25 and 34 years, where, as we remarked above, the normal rates are minimal. Among the colored group this age period also shows a very high point but it is not as high as that in the first five years of life.

EXCESS INFLUENZA-PNEUMONIA MORTALITY.

When considered from the point of view of *excess* influenza-pneumonia mortality, we find that the epidemic affected most the period of early infancy and early childhood, the period of early adult life and culminated between 25 and 34 years. The period of old age shows no significant *excess* during the period of the epidemic. The figures for April to June are very much lower than for the normal period, but these data are ob-

viously incomparable because of the differences in season, the age "norm" for 1911 to 1917 being based upon entire calendar years.

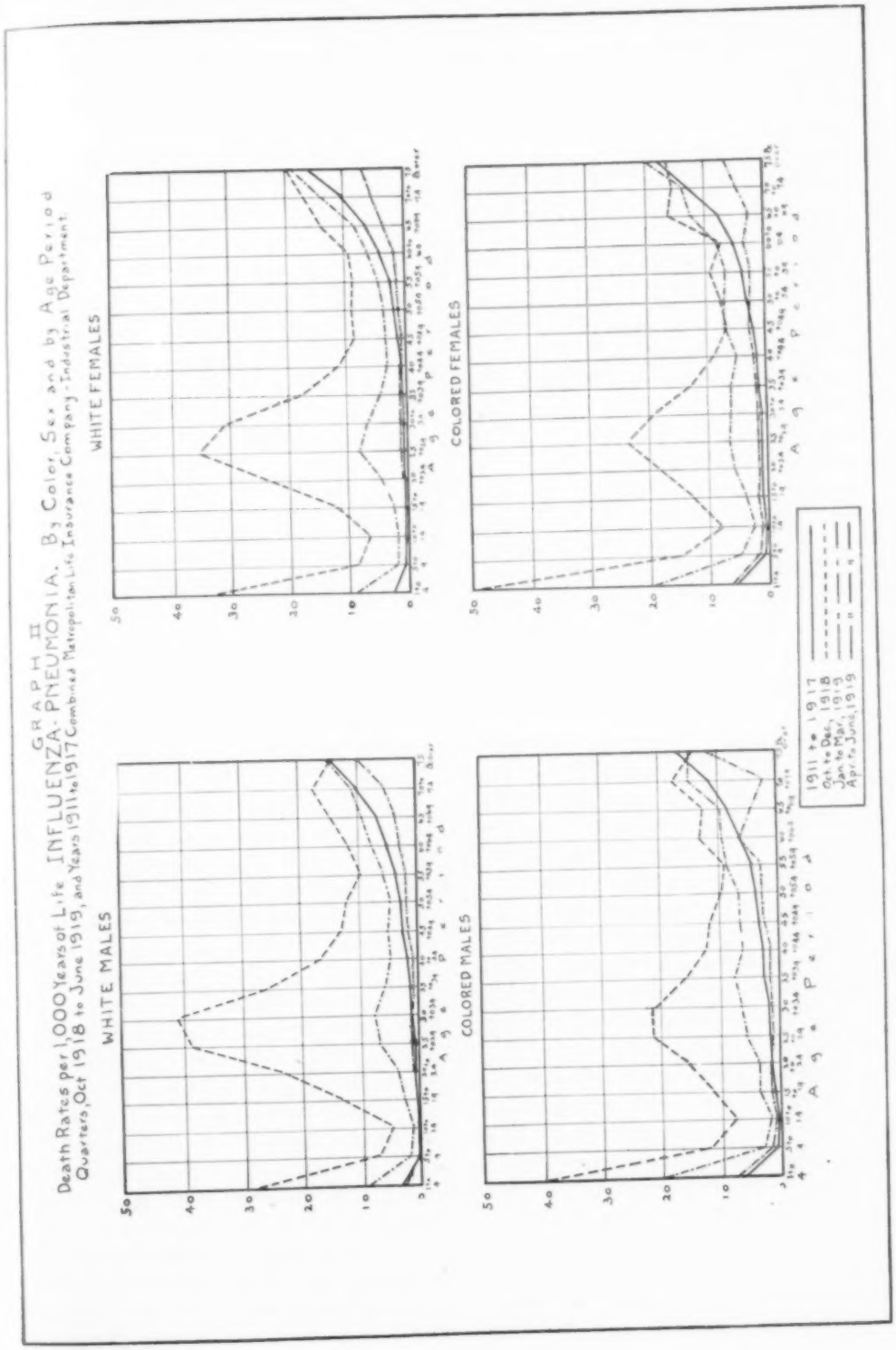
The chief characteristics of this peculiar age incidence of the influenza-pneumonia mortality are shown in the following graph for each color and sex. A solid line or other configuration is presented for each one of the three quarterly periods of the study. Graph III shows more clearly than the figures, the three modal points, especially during the last quarter of the year 1918. During the first two quarters of 1919, the points of difference from the normal are less prominent and later become entirely submerged in the "norm." The outstanding fact is that for white males during a considerable age period of active adult life, deaths from influenza-pneumonia occurred during the three months of October to December which, if they had continued for a whole year at that rate, would have removed approximately 4 per cent of the population at those ages; among white females, 3½ per cent; among colored males, approx-

TABLE 5.

DEATH RATES PER 100,000 YEARS OF LIFE—INFLUENZA-PNEUMONIA—1911 TO 1917 AND VARIOUS QUARTERS OF EPIDEMIC PERIOD COMPARED.

(Rates less than 1911 to 1917 norm, shown in bold-face.)

Color; Age	Males									Females								
		Oct., '18 to June, '19		Oct. to Dec., '18		Jan. to Mar., '19		Apr. to June, '19			Oct.'18 to June, '19		Oct. to Dec., '18		Jan. to Mar., '19		Apr. to June, '19	
	1911 to 1917	Rate	(Oct. to June)—(1911 to 1917)	Rate	(Oct. to Dec.)—(1911 to 1917)	Rate	Jan. to Mar.)—(1911 to 1917)	Rate	(Apr. to June)—(1911 to 1917)	1911 to 1917	Rate	(Oct. to June)—(1911 to 1917)	Rate	(Oct. to Dec.)—(1911 to 1917)	Rate	(Jan. to Mar.)—(1911 to 1917)	Rate	(Apr. to June)—(1911 to 1917)
White persons:																		
All ages—one and over	127	789	662	1844	1717	428	301	95	**32**	107	763	656	1723	1616	471	364	95	12
1 to 4	261	1300	1039	2806	2545	857	596	238	**23**	237	1449	1212	3218	2981	887	650	243	6
5 to 9	32	312	280	733	701	160	128	43	11	33	377	344	900	867	190	157	40	7
10 to 14	14	198	184	479	465	100	86	15	1	17	282	265	673	656	147	130	26	9
15 to 19	27	518	491	1296	1269	230	203	29	2	20	487	467	1201	1181	235	215	24	4
20 to 24	36	881	845	2273	2237	322	286	49	13	25	946	921	2304	2279	474	449	58	33
25 to 29	60	1532	1472	3878	3818	651	591	67	7	34	1471	1437	3511	3477	810	776	93	59
30 to 34	99	1628	1529	4075	3976	714	615	95	**4**	44	1289	1245	3084	3040	693	649	90	46
35 to 39	138	1081	943	2569	2431	574	436	101	**37**	58	767	709	1760	1702	462	404	78	20
40 to 44	188	724	536	1671	1483	407	219	93	**95**	77	500	423	1114	1037	317	240	68	**9**
45 to 49	228	639	411	1291	1063	502	274	125	**103**	106	417	311	850	744	328	222	71	**35**
50 to 54	291	613	322	1199	908	451	160	189	**102**	158	465	307	896	738	384	226	115	**43**
55 to 59	378	569	191	994	616	550	172	165	**213**	246	487	241	870	624	461	215	131	**115**
60 to 64	496	729	233	1149	653	784	288	255	**241**	410	572	162	930	520	611	201	175	**235**
65 to 69	699	923	224	1494	795	925	226	350	**349**	676	857	181	1386	710	842	166	343	**333**
70 to 74	1015	1125	110	1758	743	1088	73	528	**487**	1039	1198	159	1664	625	1387	348	542	**497**
75 and over	1416	1288	**128**	1411	**5**	1481	65	972	**444**	1644	1501	**143**	1982	338	1844	200	678	**966**
Colored persons:																		
All ages—one and over	216	767	551	1522	1306	594	378	184	**32**	166	767	601	1504	1338	625	459	174	8
1 to 4	593	2223	1630	3965	3372	1975	1382	730	137	553	2483	1930	4873	4320	1946	1393	629	76
5 to 9	66	532	466	1201	1135	290	224	105	39	64	694	758	1463	1399	488	424	132	68
10 to 14	35	321	286	763	728	144	109	56	21	42	363	321	781	739	231	189	75	33
15 to 19	76	537	461	1133	1057	346	270	131	55	77	602	525	1263	1186	391	314	153	76
20 to 24	120	687	567	1559	1439	377	257	126	6	85	833	748	1826	1731	563	478	110	25
25 to 29	149	928	779	2131	1982	545	396	108	**41**	80	1024	944	2307	2227	639	559	126	46
30 to 34	164	975	811	2134	1970	653	489	138	**26**	88	893	805	1935	1847	613	525	132	44
35 to 39	221	824	603	1540	1319	786	565	147	**74**	116	681	565	1288	1172	609	493	147	31
40 to 44	241	660	419	1228	987	610	369	143	**98**	131	508	377	886	755	491	360	146	15
45 to 49	304	674	370	1181	877	619	315	223	**81**	170	515	345	665	495	673	503	208	38
50 to 54	390	641	251	994	604	658	268	271	**119**	269	585	316	762	493	732	463	261	**8**
55 to 59	458	701	243	921	463	903	445	278	**180**	381	619	238	941	560	680	299	235	**146**
60 to 64	629	959	330	1312	683	934	305	631	2	513	615	102	717	204	789	276	341	**172**
65 to 69	830	888	58	1243	413	977	147	444	**386**	782	1019	237	1621	839	1223	441	214	**568**
70 to 74	1136	1154	18	1780	644	1484	348	198	**938**	1268	1105	**163**	1524	256	1325	57	464	**804**
75 and over	1635	1340	**295**	1418	**217**	1418	217	1182	**453**	1783	1416	**367**	1634	**149**	1961	178	654	**1129**


GRAPH II
INFLUENZA-PNEUMONIA. By Color, Sex and by Age Period
Death Rates per 1,000 Years of Life
Quarters, Oct 1918 to June 1919, and Years 1911 to 1917 Combined Metropolitan Life Insurance Company - Industrial Department
WHITE FEMALES
COLORED FEMALES
WHITE MALES
COLORED MALES
Ages
1911 to 1917
Oct to Dec, 1918
Jan to Mar, 1919
Apr to June, 1919

imately 2 per cent, and for colored females, nearly 2½ per cent. In the first five years of life, the annual rate was a little less than 3 per cent for white males rising to a maximum of 5 per cent among colored females. These are the crude measures of the severity of this epidemic.

One thing is clear, namely, that we are concerned in this epidemic with a disease or group of diseases which behave very differently from the way in which the disease known by the same names affected the community in previous years. The question is very properly suggested by the figures whether we are dealing in the two periods, *i. e.*, the endemic and the epidemic periods, with the same disease entities. No other disease for which reliable figures are at hand shows similar divergencies as to age incidence in different periods of time. The color relations also suggest a similar query. These peculiar relations of age and color incidence for the epidemic period are strikingly alike throughout the country. As such relations are ordinarily not subject to much variation, the changes in the period of the epidemic at least suggest that we may be concerned with a different causative agent. This problem, however, is not within the sphere of the statistician whose function is to call the attention of the epidemiologist to the facts. It is the proper business of the latter to determine in the last analysis between the identity and lack of identity between the endemic and epidemic "influenzas" and "pneumonias."

Much further study is required to clear up the meaning of these age relations in the several color and sex groups. Work along these lines is being carried on and gives much encouragement in view of the completeness and high degree of accuracy of the data for insured wage earners, both as to lives exposed and number of deaths for each color, sex and age group. Graph II and Table 5 give the basic facts with reference to age, sex and color for each one of the three month periods of the epidemic and for the "norm," that is, the years 1911 to 1917.

For the present, we give on graph III the *excess* of influenza-pneumonia experience in each quarter over the "norm" 1911 to 1917 for each color and sex class.

Mortality from Other Diseases During the Epidemic Period.

In the last quarter of 1918, a number of changes in death rates from other diseases than influenza and the respiratory diseases occurred. These changes may throw light on the nature of the epidemic since, in many cases, they were the direct resultant of the epidemic itself. This is clearly the case in connection with the increase from the puerperal diseases and it is suggested that a similar relation may have occurred in connection with the increase in mortality from pulmonary tuberculosis and heart disease. We find on comparing the death rate of the last quarter of 1918 with that of the last quarter of 1917 that whooping-cough increased among white lives from 5 to 11 per 100,000; and among colored lives, from 8 to 14. It is, of course, possible that some of these cases of whooping-cough were truly influenza or at least complicated by influenza and were confused by the physicians in the statement of cause of death. The tuberculosis death rate increased from 143 to 162 among white lives; but, among the colored, there was a decrease, 378 to 335. For organic diseases of the heart, we find an increase from 130 to 154 per 100,000 among white lives, and from 211 to 217 among the colored. Too great stress cannot be put on these figures, especially among the colored; the white change may be significant. The greatest difference occurred in connection with the puerperal diseases which increased from 15 to 55

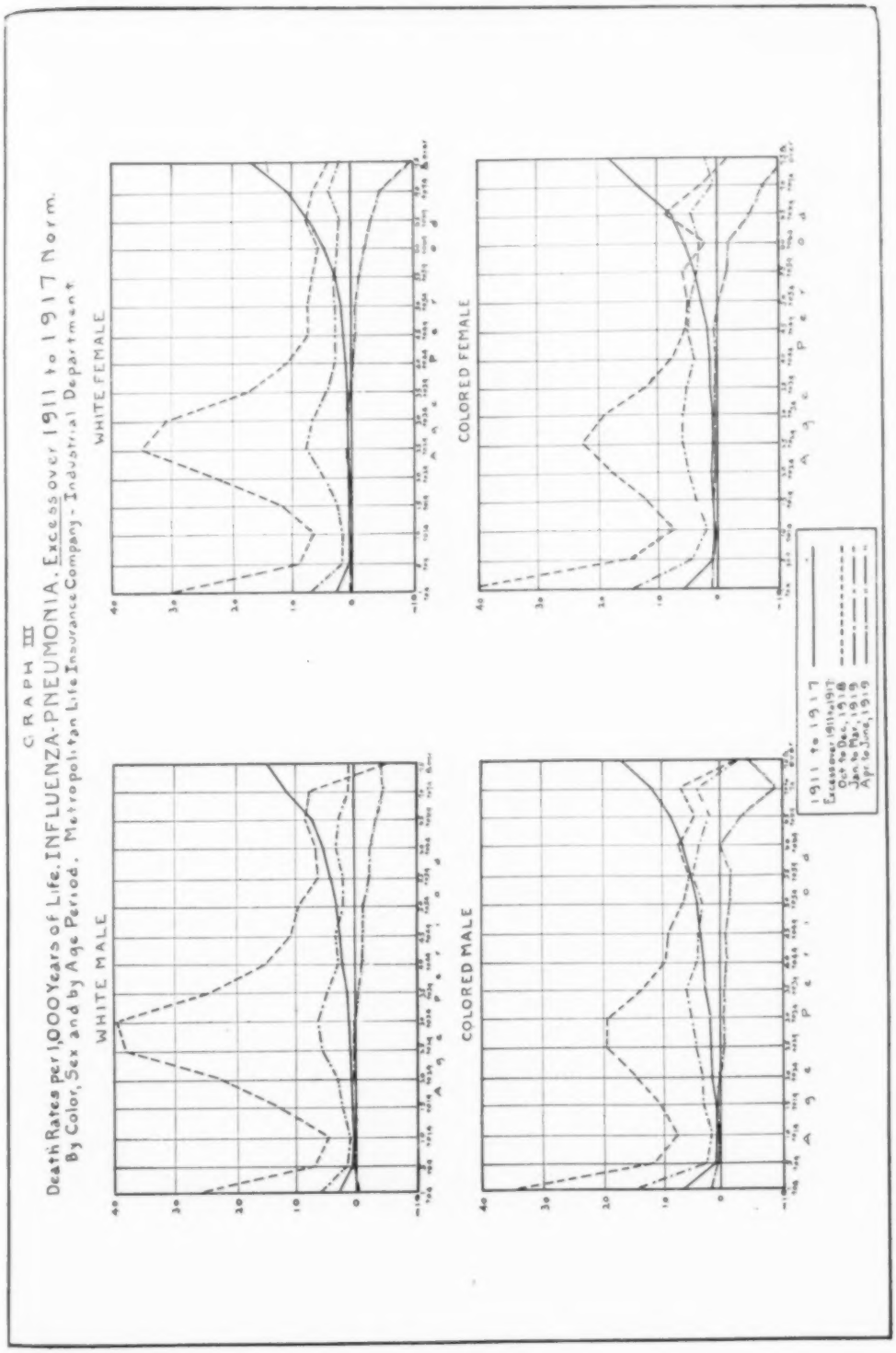

GRAPH III
Death Rates per 1,000 Years of Life. INFLUENZA-PNEUMONIA. Excess over 1911 to 1917 Norm.
By Color, Sex and by Age Period. Metropolitan Life Insurance Company - Industrial Department
WHITE FEMALE
COLORED FEMALE
WHITE MALE
COLORED MALE
1911 to 1917
Excess over 1911 to 1917
Oct to Dec, 1918
Jan to Mar, 1919
Apr to June, 1919

TABLE 7.

CLAIM RATE PER 1,000 POLICIES (ANNUAL BASIS).

Influenza-Pneumonia During Period October, 1918 to June, 1919.

Area	Influenza-pneumonia claim rate per 1,000 Oct. '18 to June '19
UNITED STATES AND CANADA	8.1
United States	8.2
Canada	7.3
BY GEOGRAPHIC DIVISIONS:	
New England	8.9
Middle Atlantic	9.1
East North Central	6.4
West North Central	6.2
South Atlantic	8.8
East South Central	7.6
West South Central	9.0
Mountain	5.6
Pacific	5.8
BY STATES:	
New England	
Maine	7.9
New Hampshire	9.9
Vermont	9.6
Massachusetts	8.9
Rhode Island	8.7
Connecticut	9.3
Middle Atlantic	
New York	7.8
New Jersey	9.1
Pennsylvania	11.2
East North Central	
Ohio	7.1
Indiana	6.2
Illinois	6.5
Michigan	5.2
Wisconsin	5.4
West North Central	
Iowa	6.0
Kansas	6.9
Nebraska	7.2
Minnesota	5.1
Missouri	6.2
South Atlantic	
Delaware	11.9
Maryland	9.8
District of Columbia	9.1
Virginia	8.2
West Virginia	8.4
North Carolina	9.0
South Carolina	8.6
Georgia	6.4
Florida	7.1
East South Central	
Alabama	8.3
Kentucky	8.0
Tennessee	7.0
West South Central	
Arkansas	5.6
Louisiana	16.1
Oklahoma	6.2
Mountain	
Colorado	14.0
Idaho	4.1
Montana	5.2
Utah	5.1
Pacific	
Washington	4.2
Oregon	4.0
California	6.3
BY CITIES:*	
Maine	
Lewiston	6.3
Portland	9.9
New Hampshire	
Dover (N. H.)	10.5
Manchester	9.2
By Cities (cont.)	
Vermont	
Burlington	9.8
Massachusetts	
Boston	9.6
Brockton	12.1
Cambridge	7.7
Fall River	8.7
Framingham	8.6
Holyoke	8.1
Lawrence	8.2
Lowell	8.4
Lynn	9.1
Malden	7.2
New Bedford	9.9
Newton	7.5
Pittsfield	10.8
Salem	8.4
Somerville	8.4
Springfield	9.0
Taunton	9.1
Worcester	8.7
Rhode Island	
Pawtucket	9.9
Providence	8.4
Woonsocket	9.7
Connecticut	
Bridgeport	8.0
Derby	16.5
Hartford	9.2
New Haven	7.9
New London	9.2
Norwich	10.1
Stamford	9.7
Waterbury	10.3
New York	
Albany	10.1
Amsterdam	8.0
Auburn	7.5
Binghamton	7.8
Buffalo	6.3
Cohoes	10.0
Elmira	6.9
Glens Falls	13.3
Hempstead	8.4
Mt. Vernon	7.4
Newburgh	9.3
New York City	7.7
Niagara Falls	8.2
Rochester	5.5
Schenectady	7.3
Syracuse	6.9
Troy	10.8
Utica	6.9
Watertown	11.6
Yonkers	7.8
New Jersey	
Atlantic City	9.5
Bayonne	9.2
Bloomfield	8.3
Burlington	9.6
Camden	10.7
Dover (N. J.)	12.0
Elizabeth	8.6
Hackensack	6.4
Hoboken	8.8
Irvington	9.2
Jersey City	10.5
Jersey City Hts.	8.6
Newark	8.1
New Brunswick	8.7
Orange	7.7
Passaic	7.7

* Includes influenza-pneumonia experience of all policies "in force" in districts having their offices in specified cities. District terri.

TABLE 7.—*Continued.*

CLAIM RATE PER 1,000 POLICIES (ANNUAL BASIS).

Influenza-Pneumonia During Period October, 1918 to June, 1919.

Area	Influenza-pneumonia claim rate per 1,000 Oct. '18 to June '19
By Cities (cont.)	
New Jersey (cont.)	
Paterson	9.4
Plainfield	10.4
Red Bank	10.3
Trenton	11.2
Union Hill	7.0
Woodbury	11.0
Pennsylvania	
Allentown	7.8
Braddock	12.3
Chester	10.1
Harrisburg	9.2
Johnstown	7.2
Lancaster	11.8
McKeesport	11.6
Millvale	12.0
New Castle	8.0
Norristown	11.4
Philadelphia	11.0
Pittsburgh	11.9
Pottsville	23.1
Reading	10.2
Scranton	10.6
Uniontown	10.3
Wilkes Barre	13.3
Williamsport	12.3
Ohio	
Akron	6.5
Canton	7.5
Cincinnati	7.9
Cleveland	6.7
Columbus	6.0
Dayton	5.5
Elmwood Place	8.3
Springfield	6.1
Steubenville	9.1
Toledo	4.6
Youngstown	9.0
Zanesville	7.1
Indiana	
Evansville	6.1
Fort Wayne	4.1
Indianapolis	6.1
Muncie	5.6
New Albany	6.0
South Bend	6.5
Hammond	—
Illinois	
Alton	7.5
Belleville	7.4
Carbondale	7.2
Chicago	5.9
East St. Louis	6.9
Peoria	9.4
Quincy	7.3
Rockford	7.0
Springfield	7.2
Michigan	
Detroit	5.1
Grand Rapids	4.7
Wisconsin	
Bay View	5.0
Milwaukee	5.2
Iowa	
Davenport	6.1
Des Moines	5.9
Ottumwa	6.3
Kansas	
Kansas City	6.0
Nebraska	
Omaha	7.3
Minnesota	
Duluth	4.6
Minneapolis	3.7
St. Paul	5.4
By Cities (cont.)	
Missouri	
Kansas City (Mo.)	5.8
Moberly	7.1
Poplar Bluff	10.1
Sedalia	7.3
St. Joseph	6.1
St. Louis	5.9
Delaware	
Dover (Del.)	10.2
Wilmington	13.1
Maryland	
Baltimore	9.6
Cumberland	14.0
Hagerstown	11.0
Havre de Grace	8.1
Dist. of Columbia	
Washington, D. C.	9.1
Virginia	
Norfolk	7.5
Richmond	8.7
West Virginia	
Clarksburg	7.6
Wheeling	9.3
North Carolina	
Charlotte	10.8
Greensboro	7.3
Raleigh	9.5
Georgia	
Atlanta	6.0
Augusta	7.5
Columbus	6.5
Macon	6.6
Savannah	6.3
Florida	
Jacksonville	7.6
Alabama	
Birmingham	7.5
Mobile	7.7
Kentucky	
Covington	8.1
Lexington	7.2
Louisville	7.4
Paducah	8.0
Paris	8.4
Tennessee	
Chattanooga	8.7
Jackson	7.5
Knoxville	4.7
Memphis	7.1
Nashville	7.3
Arkansas	
Little Rock	4.5
Louisiana	
New Orleans	10.3
Utah	
Salt Lake City	4.5
Washington	
Seattle	4.2
Oregon	
Portland	4.0
California	
Los Angeles	5.9
Oakland	6.4
San Francisco	6.2
San Jose	8.2
Canada	
Hamilton	6.3
Montreal	8.0
Ottawa	11.5
Quebec	8.5
Sherbrooke	12.8
Three Rivers	11.1
Toronto	5.8
Vancouver	6.1
Winnipeg	4.9

among white lives and from 23 to 42 among colored. This marked change in the puerperal death rate followed directly from a large number of accidents of pregnancy and accidents of labor which were induced by the influenza attack.

The following table shows the facts with reference to the changed mortality in the two corresponding quarters of 1917 and 1918. But, it must not be assumed that the figures are complete or conclusive. It may well be that some of these diseases, like Bright's disease, do not as yet show the effect on them as the result of the influenza epidemic, but that it will require a longer period, perhaps years, to show what the impairments of the kidney, which physicians report as common in their practice, had on the death rate from renal diseases.

TABLE 6.

DEATH RATE PER 100,000 FROM NON-INFLUENZAL DISEASES.

Last Quarters of 1918 and 1917 Compared by Color.

Cause of death	White		Colored	
	Oct. to Dec. '18	Oct. to Dec. '17	Oct. to Dec. '18	Oct. to Dec. '17
Typhoid fever	14	13	29	28
Measles	2	3	—	1
Scarlet fever	3	5	—	—
Whooping-cough	11	5	14	8
Diphtheria and croup	27	36	6	13
Tuberculosis—all forms	162	143	335	378
Tuberculosis of the lungs	149	131	309	349
Tuberculous meningitis	6	6	7	10
Meningitis	7	6	6	7
Cerebral hemorrhage, apoplexy	60	63	92	98
Organic diseases of the heart	154	130	217	211
Bright's disease	75	90	138	154
Total puerperal state	55	15	42	23
Puerperal septicemia	6	6	10	12
Puerperal albuminuria and convulsions	5	4	7	5
Other diseases and conditions of the puerperal state	43	5	25	6

INFLUENZA-PNEUMONIA EXPERIENCE IN VARIOUS PARTS OF THE UNITED STATES AND CANADA.

At the present time we can also offer some statistics showing the comparative death rates from influenza-pneumonia in the several main geographic regions of the United States and in Canada, for the period October, 1918 to June, 1919. The mortality rates are expressed as "claim rates," that is, the number of claims from influenza-pneumonia paid during this period per 1,000 policy-years exposed to risk. Thus, for the total company experience of this nine-month period, there was an influenza-pneumonia claim rate of 8 per 1,000. In the United States the figure was 8 and in Canada it was 7 per 1,000. Considering the experience according to broad geographic divisions the New England, Middle Atlantic, South Atlantic and West South Central States showed a rate of 9 per 1,000. The East North Central, West North Central, Mountain and Pacific States each recorded a rate of 6 per 1,000. The group of East South Central States registered a rate of 8 per 1,000. Considering individual states, Pennsylvania and Delaware showed the highest rates, 12 per 1,000, with New Hampshire and Vermont, Maryland and Louisiana following with rates of 10 per 1,000. As a general conclusion from these statistics of influenza mortality by states it may be said that the highest rates were experienced in those states having port cities and the least for the inland states.

In Table 7 we give not only the data for the geographic divisions and for states but also for a number of the leading cities in each of these states. While the data are given for the state of Colorado and for the city of Denver, no importance should be attached to the rates because the lives represented were but recently insured and were consequently limited to those ages where influenza affected the population most. This makes the rates for Colorado noncomparable with those for other states where the age and sex distribution of the outstanding policies conforms more nearly to normal.

POPULAR HEALTH EDUCATION IN CHINA; A MOVEMENT ADAPTED TO THE PSYCHOLOGY OF THE PEOPLE.*

It took an American, Dr. W. W. Peter, to break down the conservatism of the Chinese in matters of health and hygiene. He accomplished this because he understood the psychology of the people. Rattling toys and fascinating gimcracks furnished ammunition for a great health education campaign, continued today by Dr. S. M. Woo.

WHILE the AMERICAN JOURNAL OF PUBLIC HEALTH is concerned mostly with health administration in this country, still it cannot afford not to give occasionally a glance over matters of health administration in other parts of the world. One of the most interesting and important of these movements has been that which has undertaken the attack of diseases in the oriental stronghold of China. It is of a great deal of interest to see how American initiative with a keen study of the psychology of a nation has fitted its means to the vivid imagination of an Eastern populace. Here, rattling toys, tinkling bells, moving dolls and fascinating gimcracks appeal to the Chinese and teach them lessons in sanitation, just as the sketchy cartoons, sprightly posters, and stirring setting are catching and holding the attention of the French. This has been done by W. W. Peter, M. D.

It is a stupendous task even in a friendly country of the same race, as in France, to undertake the campaign that is under way against tuberculosis and infant mortality. Think, then, what it must mean in courage and conviction to undertake a warfare against many diseases in a country of different race, of totally different ways of thinking, and with a language that is practically impossible save to the tongue that has practiced its modulations in infancy. China and its neighboring lands in Asia form the vast storehouse of infection from which great epidemics sweep in waves across the globe.

Smallpox and cholera and plague, before whose very names the continent of Europe has trembled, have their homes here in a congested country, with sanitation playing no part of the public policy. It is a country whose population has never really been counted, where births and deaths go unrecorded and where statistics have still to make their entering wedge. With a people secluded from the world till yesterday, where conservatism has been the prevailing spirit, where the tracks of the first steam railway were torn up by an infuriated populace, one wonders who has had the temerity to knock at the door.

But the knocker has been vigorously plied and by Americans. Fortunately China has wise men in control who have opened the door from their own side, so that today there has been initiated a health education campaign, conducted by Americans whose progress through the Flowery Kingdom reads like romance.

Three important factors have contributed to the innovation, the National Medical Association, the Chinese Medical Missionary Association and the Y. M. C. A. The first-named is the "American Medical Association" of China, and every physician in this country knows what

*Prepared by the Associate Editor from notes of personal interviews with Dr. W. W. Peter. For the illustrations the JOURNAL is indebted to the International Commission of the Y. M. C. A.

that means. It includes the younger and progressive blood of the Chinese medical fraternity who practice Western methods. It is young, it has its own way to make, but it has given a helping hand to the campaign for public health. The Medical Missionary Society is composed largely of Easterners and the Y. M. C. A. is an outgrowth of the great American Association, a well-established institution with several hundred local secretaries, all Chinese. It saw in the new movement the promise of splendid results and it agreed that it would finance the experiment. It has fulfilled its word, the experiment has borne the richest fruit, and the United States must be interested to see to the continuance of the work.

The fundamental plan of the campaign is prevention through education, and it has been the task of the movement to evolve the methods of education. This has been done by a reversion to kindergarten illustrations. The Jacob's ladder has been an important demonstrator, that fascinating toy which with the jumping jack and monkey on the stick, now given over for the iron auto and erector units, amused the children of a generation or two ago. For those not familiar with the ladder, it may be described as a number of short slats of wood held together by bonds of tape or string. These bonds permit the slats to hang below one another in a vertical plane. When the top slat is given a half-turn along its horizontal axis, the tapes permit the other slats to drop one after another till all have assumed the new position and expose the other side to the spectator. A picture or set of words or letters is fitted to each side and this is changed when the clattering, zigzag dropping of the slats takes place.

The moving spirit in establishing this work was Dr. William Wesley Peter, B. A., M. D., a citizen of the United States. His presence in China was that he might serve as a medical missionary among these people. At the language school in China, the Y. M. C. A. gave lectures with experiments, addresses by eminent scientific men, and some of the topics

The members of the last of a series of health meetings in Peking. Dr. Peter (to the left) and the American Minister to China, both in the middle of the front row, are surrounded by highest Chinese dignitaries.

Stage set for an illustrated lecture. To the left are the Jacob's ladders, indicating death rates; centrally overhead are the bell and clockfaces giving the toll from tuberculosis; below are the figures turning wheels, those to the left by correlated effort revolving all China; in front are the tables showing density of population; above to the right is the chain with the weak link; below are heads showing effect of good and bad methods of living, and the tuberculosis doll.

were light, heat, and electricity. Hearing this, Dr. Peter said one day, "Why not have a lecture on health?" From this casual inquiry has grown the great work of which he was the leader. About a year ago, he returned to this country to perfect himself in certain studies, and while here was requisitioned by the International Health Board for the carrying forward of some of its important projects. His work in China has been continued by Dr. S. M. Woo.

In China the toy persists, and Dr. Peter has made of it a spectacular illustrator of mortality rates. On one side of a Jacob's ladder the slats bear the name in Chinese characters, America, Europe, India or China; and on the opposite side, on each slat, one skull, typifying one death. Before an Oriental company the toy is held aloft and the legend tells of a country; with a turn of the wrist it is reversed, and with a clatter the skulls appear. For America there are fourteen slats and fourteen skulls; every one in the audience can count them, a mortality rate of fourteen per thousand. India, with its longer ladder, tallies thirty-five, while China, with still greater showing of skulls, rattles down to forty.

This is a striking illustration, which needs no mathematics; the short tally of skulls and the long one—so long that the lecturer must mount upon a box to keep it clear of the ground. How excellent a study in psychology is this appealing by a toy to the Chinese, "childlike," as Bret Harte has characterized him! And the question follows, "Why? You are proud of your China, but here is this. Why is it?"

Various illustrations in demography employ tables, ordinary Chinese living-room tables. By some necromancy little wooden men are pushed up through trapdoors by secret springs, in combinations and in the twinkling of an eye. The Orientals love the magician. Here is a table that counts; it can tell its story in density of population. It is not unusual for a spectator to say that these statistics are all very well, but it is foolish to compare countries like America or the nations of Europe with forty or fifty or one hundred millions only, with thickly settled China and its five hundred millions. "Let us see what the tables tell," says the lecturer, and behold for England forty dolls, representing forty persons to the square li jump with a common impulse into view. For India there are twenty, for little Holland, fifty-three, and for Belgium before the war, seventy-three. Then comes China's turn and from its own decorated table top there rise eleven little wooden Chinese figures. The thickly settled provinces show twenty-three. "But how about Shantung, with its many millions?" and out come fifty-nine puppets to tell the story. It is thus that the auditors express their interest and help the speaker, who ranges the seventy-three Belgians against the eleven little Chinamen and says, "in Belgium, the most thickly populated country on the earth, public health has done things."

The doll or manikin appeals to the older Chinese as it does to our children. Here is one dressed in conventional fashion. It is weak and shrunken, its head droops on its chest and is withal flat and flabby; it is the sick China of now. Let us apply therapy; the figure straightens itself up; let us furnish education; the shrunken head of the figure through the magic influence of compressed air judiciously used, expands; let us apply moral training and the gleams of intelligence and rectitude shine out through the figure's eyes.

Still another figure, a manikin, again sick China, is bending under his burdens, for he has heavy packs. These are tuber-

culosis, cholera, plague, and other preventable maladies. The greatest burden of all is lifted from him and he straightens up a bit—the pack is unrolled—it is tuberculosis, and as the assistants lift it to carry it out back through the flowing curtains, the people read the name. One after another the packs are lifted and the manikin is more and more erect. With great ceremony they are unrolled and the boxes held so that the names are read before they disappear. "Now, would you see magnificent China when it has put these preventable diseases under its feet?" queries Dr. Peter, and with the murmurs of assent the silken curtains part, and there on the pyramid of conquered diseases stands the most perfect specimen of manhood in the city, usually the physical director of the local Y. M. C. A. gymnasium, and over him waves the flag of China. "Is this a picture of what China might be, or am I wrong?"

A variant is the race of the nations with the stage for the track. Some one familiar to the company, perhaps a beggar from the street corner, impersonates China. He is loaded with the burdens of disease. America is there, with its proportionate burden, and France and Japan. Most of the company have never seen a race. The lecturer dramatically draws with chalk the starting line and arranges the tape at the finish. It is done openly and with much ceremony. There is interest and excitement attending every movement. He lines up the men, he tells them what they must do, how they must start, he explains his count, "one, two, three, go," and he counts again for the real start with the excitement of the audience at a maximum. Of course China comes in last, and there is no need to explain to the company the reason.

Then there are the automatic graphic diagrams, where by themselves the lines unroll to their proper place, a quiet bit of mystery. This one shows the percentage of educated people in the countries. The lecturer cries, "America," and a great length of ribbon flows up and forms one of those columns that statisticians love to juggle with; England and the

The arrival of the wheelbarrow outfit in a Chinese city. It has drawn up before the door of the local Y. M. C. A.

countries of Europe likewise unroll themselves and make a goodly showing.

"And now, China," says the lecturer. China starts; it is slow; it creeps along a little way; it stops. "The machine is broken," mutters one of the spectators, and the lecturer sadly shakes his head, while another auditor speaks, "It is true, we are at fault. We must make our nation strong with schools."

The outfit that Dr. Peter took with him in his journeys to lecture through China and which is in use by Dr. Woo, forms to Western eyes a quaint procession. There are five of the big wheelbarrows that carry altogether two and one-half tons of stage fittings and apparatus.

These five great barrows with their enigmatical loads excite as much attention in a Chinese city as the circus elephant does here in a country town. The platform of the auditorium has a mystical look. There are curtains that hide things, there are queer devices, some of them familiar to Americans, the bell that clangs for every death from tuberculosis, the clockface that registers the total and the figures in their endless procession to the grave. There are busy little workers toiling in turning wheels; they accomplish nothing, for they work alone; there is another group working in harmony which revolve great China by their correlated efforts. Pyramids are built on the stage, always with deliberation and ceremony. Their elements have in them the contacts for an electric light. The capstone is lettered, "National Health," the lower stones bear legends, "Money," "Good Laws," "Education" and at the bottom, the largest and most important, "Public Opinion." When that is in place the light shines forth. Then there are chains with strong links and weak links.

Every item is psychologically fitted for Chinese appreciation, and with this array, helped by men who turned the Jacob's ladders or removed the packs from China's back or drew aside the curtains, Dr. Peter addressed his auditors and found his way to their intelligence. "An American," they said "but with a Chinese heart." And in this way he has stood before 110,000 of China's best citizens telling them in language that they can never forget the simple principles of good health.

Every factor is focussed to its work and so cunningly and so picturesquely withal, that could a good theatre manager once get hands on the outfit he would never let it get off his circuit. Not only has the platform the charm of that of the necromancer, bright with silken banners, inscriptions in Chinese and English, masking curtains, half-drawn, yet concealing something which presently produces some surprising effects, but the meetings have been planned with all the care of a social function. The city authorities are invited to form a committee, they are notified that there can be only three meetings a day for the six days, and those who do not come will lose the opportunity. Local authorities give the schools a holiday in which to attend the lecture, and admission is strictly by ticket. Thus it is that crowded houses followed Dr. Peter everywhere.

This experiment has been continued by Dr. Woo, educated in the United States, and on him the executive work now falls. He himself has lectured to more than one hundred thousand auditors.

After the picturesque introduction there is follow-up work on the American plan and it works. Imagine the Chinese popping into a vacant store to view an exhibit of anti-tuberculosis information, but they do just as easily as the Gothamite into an exhibition on Fourth avenue

or 23d street. Imagine the Chinese entering a National Health Essay Contest with gold and silver medals for the prizes. It was Mr. Yang Tuk-Pan who headed the fifty-one essays submitted, two of which were by women. "The history of the world shows," writes Mr. Tuk-Pan, "that disease has been a most potent factor in national deterioration. It is now clear to the minds of all the educated people of the world that the most potent factor in the decline of Egypt, Greece and Rome was disease." And he gives the remedies, good, sensible, American remedies—education, boards of health, industrial hygiene, vital statistics, public health education and social service organizations. What essayist in an American medical college could sense the needs any better?

Then there is much done in administrative work towards local organization, and much with the lantern-slide outfits and exhibits, and much beyond in plannings for the future.

Enough has been said to show the importance of this anti-tuberculosis, public health campaign, which is marching steadily forward in China towards a modern realization in that country of the methods and advantages of modern public health.

THE HEALTH OF THE COLLEGE.

EUGENE C. HOWE, PH. D.,
Associate Professor of Hygiene, Wellesley College.

Colleges are generally weak in public health administration, according to this author. Standards for milk and water supplies are low, ventilation is a closed book, supervised exercise is usually wanting, personal hygiene instruction is not followed up, and off-campus living is little supervised. Here, where example is needed, health administration is often hap-hazard, usually inexpert. : : : : : :

BOTH within and without the ranks of educators there has always been a discontent with the results of the practice of education, stronger perhaps than that felt toward any other of our necessarily imperfect human institutions. Uninspired vocational and technological training on the one hand, and on the other, ornamental incrustation with learning and social culture masquerade as education. In both, the essence of education is absent. In both, the ideal of education as a guidance of individual unfolding, physical and mental, is often forgotten in the striving for material success, scientific advance, and academic pose.

The world has had its revival of learning. May it not be hoped that we are approaching another renaissance—a quickening of education from its commercialism and formalism into active accord with the ideals of the leaders of educational philosophy, and with the lessons of modern biology.

Education, in the light of these ideals and these lessons, is the arrangement of the conditions of normal human growth. Normal growth is the complete and balanced development of the whole

human being leading to his greatest usefulness. The problem of normal human growth and its conditions is fundamentally biological. It merits a high place as a problem in pure science and its practical solution is the most important task that confronts humanity. Its solution should centralize and coördinate the teaching of all special lines of knowledge and bring them into true relation with individual evolution.

The most obvious defect of educational practice has been the unreasoning neglect of the physical basis of life. Not but that a hideous and diseased superstructure may be erected on the most admirably developed physical basis, witness the moral, preceding the material downfall of Prussia. But certainly no building can be complete, symmetrical and safe, whose foundation is insecure. The headway made in the secondary schools by physical education and medical prophylaxis in redressing the balance does not come into this discussion. In the college the apparently deliberate trend in personal example and in general influence pursued by learned faculties has been toward an academic community of spirits, with a mere tag or vestige, for purposes of identification perhaps, of "man's flesh . . . to coop up and keep down on earth a space that puff of vapor from his mouth, man's soul." Fortunately this trend of the educational oligarchy has been more than offset by the instinct of youth toward organization for contest, recreation, and physical development. This instinct has been reinforced and capitalized by the art of physical education and by the new science of personal hygiene, the material complement of education—new because shorn of the absurd folk-lore that has characterized it in the past and because established conservatively on a basis of biology.

As a result of such reinforcement, in some instances shared or initiated by the college infirmary staff, the importance of a high standard of health for both student and teacher is being thoroughly advertised (strange though it is that there should be any need of argument), and some practical progress has been made. But now that the world is so rapidly awakening to the value of health as the prime natural resource, the college and university must be content with nothing less than taking an exemplary stand in sanitary administration.

Studies have already been made of the status of physical education, hygiene, and sanitation in American colleges. (Sibley, 1915; Meylan, 1908, 1910, 1912, 1916.) In one of his reports Meylan (1908) says: "A definite responsibility rests upon every college and university to provide a sanitary environment for students, officers and employees of the college community."

It would seem desirable to go further than this and say that the college community is entitled to a quality of health protection at least equal to that provided by the most efficient example of municipal sanitary administration, with certain additional features obligatory upon the college in particular. To picture the status of college hygiene and sanitation as reported by the teacher of physical education, the medical practitioner, and the sanitary biologist, the Department of Hygiene, Wellesley College, requested the coöperation of the physical directors of the 73 American colleges and universities listed by the Carnegie Foundation and one other. A brief set of enquiries was sent with the request that all the questions under their jurisdiction should be answered and that the questionaire then be passed on to the college physician and other officials who might be able to supply information outside the field of the

physical director. Sixty-one, or 82 per cent, replied—22 from men's, 6 from women's, and 33 from coeducational institutions. To the latter two questionaires were sent. In 16 cases both were returned. In 11 cases only the physical director of men, and in 6 cases only the director of women replied. The total number of questionaires returned was 77.

The percentages referring to water supply, sewage disposal, stables on campus, protection against flies, use of common towels and cups, and sanitary administration, are on the basis of the total number of colleges heard from, 61. In dealing with the subjects in which the conditions for men and women are different, the percentages are based on the total number of questionaires returned, 77. When the percentages under a given question do not total 100, it is to be understood that the remainder represents the percentage of failures to reply.*

The questions were arranged under six main heads:

I. Physical entrance requirements.
II. Personal hygiene—instruction, exercise, etc.
III. Medical care and prevention of illness.
IV. Sanitation of college plant.
V. Supervision of students' living conditions off campus.
VI. Administration.

I. Physical Entrance Requirements.

Extent.—The purposes of such requirements are four. First, to set a standard as high as practicable and thereby shield the college from transmissible disease, and to prevent the lessening of efficiency in the class room and the loss of time and money to the student when the latter enters only to withdraw sooner or later on account of physical incapacity without any substantial accomplishment to his credit. Second, to encourage secondary and grammar schools to pay more attention to the development of sound physique. Third, to classify students as to their capacity to enter into the more vigorous sports. Fourth, to obtain a measure of the entering student's physical development that will serve as a guide for future physical education, for possible limitation of academic program, and in general for the proper ordering of his whole college life for his best interests.*

Three quarters of the departments of physical education who returned the questionaire require a physical examination of all entering students. The reasons given for exemption seem in some cases scarcely adequate, and in some, irrelevant. Four colleges give no physical entrance examinations whatever.

Number of examiners, number of candidates handled per examiner, and time devoted to examination.—In one fifth of the cases where there are physical entrance requirements, three or more physicians are employed. The average number of candidates handled by each examiner is, however, substantially the same in the group providing three or more examiners as in the group providing less than three, 146 and 149 respectively. The range covered by these figures is far too wide to indicate uniform efficiency—from 34 to 828 students per examiner. The figures are based on the records of numbers of entering students handled in 1916 by 64 out of the 77 staffs that returned the questionaire.

The time devoted to the examination is, of course, an important element in its effectiveness, the latter being greatly lessened by protracted periods. In the

* Data collected and tabulated by Marie L. Carns, B. A., graduate of the Department of Hygiene, Wellesley College, 1918.

case of 55 returns it was possible to compute the average number of entrants per day per examiner. The relation between these figures and the period of time required for examination is given in the following table:

Average number of entrants per day per examiner.	Period of Examination—Days.					
	4–10	11–20	21–30	31–40	41–50	Totals
1–3	0	1	3	1	4	9
4–6	3	4	4	8	3	22
7–9	1	5	4	1	0	11
10–12	1	3	0	0	0	4
13–30	3	4	1	0	0	8
31–48	0	1	0	0	0	1
Totals	8	18	12	10	7	55

The upper right and lower left corner of the table give the least desirable combinations of length of examination period and number examined. The optimum position on the table is probably column 1, lines 3 or 4—the staff of examiners so scheduled on the above table is large enough to complete the work in a reasonably short time, 10 days or less, each examiner handling from a half dozen to a dozen applicants a day.

The fact that only 30 per cent of the departments replying had physical examination forms to send does not speak well for the value of the examinations.

Orthopedic examination.—Orthopedic examinations are given according to 72 per cent of the replies. In 78 per cent of the cases where such examinations are given, no posture tracings or photographs are given to the student to stimulate him to improvement.

Basis of exclusion from college. Numbers excluded. Amount of restriction of program compelled. Dental and visual examination.—Although practically all the colleges advertise physical examination, either no bar against entrance is set, or no definite statement is made, or no answer is given in 58 per cent of the returns. In other words, in more than half the departments replying the examination is insisted on but the "books are not read."

Further illumination is supplied by the figures which show that during the last five years, according to three quarters of the replies, either no entering students have been barred for physical disabilities, or no record has been kept, or no reply is made. If to this number is added the number of departments which have not barred more than six candidates (of the thousands admitted) in the last five years, the list includes 90 per cent of the departments which replied.

Objection may be made that exclusion from college can, at present at least, be only a very minor object of the physical examination; that the college has neither the right nor the obligation to exclude any but the very exceptional cases. If this objection is sound, restriction and regulation of physical and mental program becomes the principal reason for the examination. During the past five years there has been either no restriction of academic program, or no record of any such restriction, or no reply to this question is made, in 90 per cent of the returns.

Dental and visual examinations are indicated in about one half and three quarters of the returns respectively. This can hardly be called a good showing. Furthermore, the examinations are not given by specialists in 56 per cent and 65 per cent of the departments replying, respectively, a large number not answering the question at all and therefore probably to be included among those which do not have dentists or oculists for these tests. Making this supposition, 96 per cent and 91 per cent respectively do not have the tests made by specialists. There

may be differences of opinion as to the practicability of special examination for dental conditions, but it would seem that for students, among whom without doubt much damage to health is wrought by visual defect, a more thorough examination, or re-examination in the case of those who already wear glasses, should be provided, than can be made by the general practitioner in the course of his rapid general survey.

II. Personal Hygiene—Instruction, Exercise, Etc.

Exercise.—Gymnastic instruction has reached the point of being required in a little more than 90 per cent and additionally or solely elective in 69 per cent of the departments of physical education.

Participation in athletics is required according to a little more than half the returns. From a hygienic point of view general enjoyment of this form of exercise is at least as important as general instruction in gymnastics. There has always been a question as to the best course to pursue to make regular, vigorous exercise universal among students. Individual influence exerted on those who need it but are disinclined toward it, and intramural and sanely managed intercollegiate contests can be made to create a student conscience in favor of outdoor life and physical fitness. Play, compulsorily and mechanically scheduled, is likely to become a travesty, since the essence of the benefit of athletic exercise is spontaneous enjoyment.

The percentage of affirmative replies reached its lowest point in the matter of restrictive and corrective gymnastics, only a third of the returns indicating that such work is done, 38 per cent not heard from. From the internal evidence in the replies on this point it would seem that there is great diversity of opinion as to the definition, significance, and importance of such work.

The fact that careful examination of candidates for major sports is a needed protection against serious and sometimes irreparable damage to health has been much discussed. It is generally believed that most of the large colleges are sufficiently watchful. The above figures show that according to more than three quarters of our 77 replies, such examinations are given, with only two institutions, not heard from. But the showing should be even better.

One fifth of the questionaires report no special provision for exercise by the teaching staff. Perhaps the wonder is that the number is as small as it is. Of the 75 per cent who do make such provision, over half report that little advantage is taken of it, or that not more than 10 per cent of the teachers make use of the opportunities offered, or do not reply on the question at all. The fault is probably evenly divided between the preoccupied general teaching staff, and the staff of the department of physical education which fails both in making its argument for the complete life forceful, and in making its invitation attractive.

Instruction in personal hygiene.—The entrance of personal hygiene into the college curriculum as a required course of study is a noteworthy fact, in view of the apathy with which the subject has been regarded by academic faculties. In 1890 only six colleges required such a course (Meylan, 1910). Sixty-one per cent of the returned questionaires report such a course in freshman or sophomore years or both. However, about 13 per cent out of 61 per cent are short irregular courses ranging from six hours in one or two terms to twelve hours in six weeks, or are combined more or less informally with the practical work in physical educa-

tion. Since Meylan in 1910 reported 76 per cent of the colleges investigated by the Committee on the Status of Hygiene in Colleges and Universities in the United States as giving required courses, it is clear that progress in this direction has stopped during the past eight years. The discrepancy between 61 per cent and 76 per cent does not indicate retrogression, but a more rigid exclusion of informal courses, in obtaining the former figure. It may also be partially accounted for by the more limited selections of institutions for this study.

The percentage of cases (80 per cent) where the course in personal hygiene carries college credit is unexpectedly high. Academic standing alone, however, supplies no motive power in the journey toward success. It is analogous to payment of fare. The end of success is reached only by the power of results. Results come only through coöperation with every health agency of the college.

The natural obstacles in the way of effective health instruction are great. Too often the instructor's background is purely medical and his scope in teaching hygiene includes little but a description of imminent diseases and of the physiology and anatomy of the human body. Too often the classes are so large that lecture work alone is possible, and the likelihood of getting a concrete reaction aside from any specious emotional response is slight.

A course given by a series of specialists cannot maintain a high level of interest and value. Personal hygiene is the sort of subject that strays at the slightest invitation into the regions of personal bias and medical specialty. The ideal arrangement is to have a teacher and assistants with the biological background and the point of view of positive hygiene, and small classes in which discussion is possible.

The subject matter of the course should be well knit into a consistent whole and put in the form of a printed outline or syllabus for the students' use. It should be neither too theoretical nor too deadly dogmatic. The reference books should be abundant, interesting, and chosen with strict regard to biological soundness. Lantern demonstrations help to keep the subject matter of the course in live touch with modern sanitary progress, and to drive home the facts of the special personal and general economic value of health. When the classes must be large, short written quizzes at the end of every other appointment, make the problem of judging the students' progress easier and fairer. This necessitates a corps of assistants to read and correct the answers and consult with students whose interest needs stimulation. Finally, the course, to show demonstrable results, must be correlated with the remedial work of the college by means of morbidity statistics and records of physical development and must be reinforced by individual conferences with students in need of advice. In fact, the illustrated statistics of fluctations in college public health and of improvement in students' posture, strength, and skill, is most valuable material to include in the course itself.

It is not easy to see why, with college students, there should be any neglect of the presentation of the biology and ethics of sex. Fourteen per cent answer the question negatively and thirteen per cent not replying, are probably in the same category.

III. Medical Care and Prevention of Illness.

Over half (57 per cent) of the returned questionaires report "no infirmary." In about half the cases where there is a college infirmary, are patients treated by private doctors required to report to the

director of the infirmary or to other college authority.

The college hospital may be conducted as a hygienic and prophylactic institute to which students are encouraged to bring their health problems, or it may remain nothing more than the conventional last resort of the seriously incapacitated. It is gratifying to find that in all those cases reporting a college infirmary, the question, "Is there any system of encouraging students to obtain medical advice on the slightest suggestion of illness?" is answered in the affirmative; and that in many instances the system is briefly described. On the other hand, out of the 57 per cent who report "no infirmary" 15 per cent state that no such encouragement is systematically given and 42 per cent do not reply.

About a fifth of the infirmaries have no system of following up discharged cases and about four fifths of them do not use their morbidity statistics to check up and demonstrate the effect of instruction in hygiene and of gymnastic and athletic training. Less than half (40 per cent) of the colleges record the vital statistics of their graduates.

It is to be expected that the medical officers of the college should be the leaders in adopting the practice of modern medicine and sanitation of placing health protection above health salvage. Without a doubt they do this as far as their training and their time, remaining after clinical duties, allow, and there are a few instances in which the college infirmary staff is unquestionably, on published evidence, a health institute, actively and successfully encouraging students to consult for general advice and on the initial appearance of illness, and submitting annual reports showing the trend of morbidity data. Without such data, the college moves in a world of a century ago, before vital statistics, the bookkeeping of health and disease, existed. The motto of the college hospital staff might be—"skilled in cure, interested in health."

IV. Sanitation of the College Plant.

Water supply.—Only 15 per cent of the colleges have their own supply separate from that of the city or town in which they are located. Of the other 85 per cent less than half (37 per cent) make any sort of sanitary examination. And of those making any kind of an examination, only about a third (31 per cent), or one eighth of those sharing their supply with the town, specify a bacteriological examination. One college reports examination for disease germs, and another a yearly bacteriological examination!

In 62 per cent of the cases where the town water is shared by the college, there is a surface supply. In almost half of these surface supplies, the colleges concerned do not provide sanitary examinations or do not report on the subject.

In only 40 per cent of the colleges whose water comes as above described, is it filtered or treated in any way by the town. In 7.7 per cent of these cases it is so treated by the college.

Of the 15 per cent which have a separate supply, one-third (3 cases) filter it, and all make some claim of safeguarding, though in a few cases in very general and unsatisfactory terms.

Apparently the lessons of the Ithaca typhoid fever epidemic have not been sufficiently widely and thoroughly learned.

Milk supply.—One fifth of the 77 commissary departments use a pasteurized milk supply, and about the same number claim to keep track of its content of butter fat, and number of bacteria, and to guard against infection in handling. No details, however, are given as to how these things are carried out.

Ventilation.—In only five questionaires, or 6 per cent of the 77 returned, is it claimed that standards of ventilation are maintained in class rooms, offices, and dormitories.

The replies of the four out of the above five which answer the question on the nature, frequency, of the tests made, do not reflect much of the light that has been emanating from research in the field of ventilation. Some characteristic replies are: "Tests for bacteriological colonies." "Tests frequently made by Professor of Pathology." "Examination made occasionally by Superintendent of Buildings." "Tests made three times yearly by students of the hygiene course."

Swimming Pool.—Of the affirmative replies on the possession of a swimming pool, 40 per cent indicate some sort of artificial ventilation of the room in which the pool is located. In two cases it is admitted that the ventilation is unsatisfactory. It is not easy to say what should be the verdict in this matter. It would seem as though the chief point in such ventilation would be the prevention of possible excessive heat and humidity in locker and other rooms contiguous to the pool.

Three quarters of the pools are disinfected and in more than half, the water is filtered. In almost exactly half, both chemical treatment and filtration are used.

Sixty-seven per cent of the pools are reported to be examined in regard to the sanitary condition of the water. Of these reports, 20 per cent fail to say how often, 16 per cent say "irregularly," while the other replies vary from "daily" to "once," and "every two or three years." It would seem that, if infection through the swimming pool is of any considerable importance, there should be quite as regular sanitary surveillance here exercised as there would be over the filtration or storage of a suspected water supply.

It is scarcely possible to classify the replies to the question "standards set." A third of those making a sanitary examination are silent on such standards. The rest cover a wide range of requirements, one going so far as to stipulate "no pathogenic germs."

Three quarters of the replies state that the bottom of the pool can be clearly seen in all lights. In no case when women are using the pool is an unlimited number allowed in the water at one time. Safety demands regulation of numbers for both men and women, the presence of a trustworthy guard, and good visibility of the bottom of the pool.

Further data such as dimensions of pools, rate of flow of water, number of students using, etc., would be desirable to complete the picture of this phase of college sanitation. However, the data which were received on these topics were so incomplete as not to be susceptible to summary and correlative examination.

Sewage disposal.—Half of the colleges use the sewage system of the town or city where they are situated. One-sixth have their own methods of disposal, which with one or two exceptions seem to be, as far as can be judged on the superficial evidence submitted, satisfactory. The subject is not one on which light may be thrown by answers to a few simple questions, as is the case with water or milk supply. The fact that one third of the respondents do not touch on this point is a discouraging indication of the relative lack of interest in this country in this important phase of sanitation.

Stables and flies.—In three quarters of the replies there is testimony to the presence of stables on the grounds, while less than half make any claims to screening stables, kitchens, or dining rooms. The suspicion against the character of the fly

as a transmitter of disease and the knowledge of his outrageous habits have been so thoroughly broadcast that it would seem as though a better showing on this point should be made by institutions of learning.

Common cups and roller towels.—The doctrine of the perniciousness of the common cup and towel has evidently taken effect more successfully, although three colleges have the courage to admit that such utensils are permitted.

V. Living Conditions Away from Campus.

A very considerable portion of the students of many American colleges live in private houses. It is surprising to find of the colleges (each coeducational college counting as two) whose student body is thus divided, less than half assume responsibility for the sanitary condition of private boarding houses.

Of those who do not assume such responsibility (31 per cent) the percentage of students who live off-campus are distributed as follows:

Per Cent.	Per Cent.
10....2 replies	66....2 replies
16....1 reply	75....2 replies
20....2 replies	80....1 reply
25....1 reply	90....2 replies
30....1 reply	100....2 replies
33....1 reply	No record....1 reply
50....4 replies	

VI. Administration.

Authority over physical education, instruction in hygiene, and clinical service vested in one person?—Upon far-sighted administration and coöperation, after all, depends any real accomplishment and progress in improvement in student health by normal hygienic and educative methods, and in protection against endemic and epidemic transmissible disease.

It has already been noted (Meylan, 1910) that departments of physical education have been arrogating to themselves the administration not only of didactic instruction in personal hygiene but also of clinical service and of the general sanitary situation of the college. At the present time this condition is seen to exist in so far as the first two items are concerned in one half of the colleges (coeducational counting as two) replying to our questionaire. The remainder of the table presents an array of items differing so among themselves as to be unclassifiable.

Athletic association.—Too much emphasis cannot be laid on the importance of close coöperation and sympathy between the student athletic association and the department of physical education. The effective execution of the latter's ideals for health and physical development cannot be realized unless an informing, inspiring, and convincing influence is exerted by this department upon the leaders of athletic activities. In only seven cases (9 per cent) out of the 77 replies is it stated that there is no relation between the athletic association and the department of physical education. According to 27 per cent of the returns there is an athletic council one member of which is the director of physical education. An extremely varied relationship is shown by the remaining replies.

College dietitian.—Food economics have been coming into acute prominence during the past twenty-five years, for various reasons besides those related to hygiene. When the country has been flooded with exhortation to conserve scientifically, should not the colleges make a better showing than that indicated by the following figures? In only a quarter of those cases in which dining rooms are maintained is there special service in planning and in buying, and in these cases the supervision of the work is extraordinarily diverse and for the most part

apparently inappropriate, including such officials as the dean, the president, the trustees and the cashier.

Administration of campus sanitation.—

	Per Cent.
Jurisdiction not under specialists	45.7
Jurisdiction probably under specialists, but statement not definite	14.9
Jurisdiction under city authorities	11.6
Jurisdiction not under solely medical college specialists	16.0
Jurisdiction solely under medical college specialists	11.2

As the above table shows, the amount of sanitary administration in the hands of college officers not trained in sanitation is large. There is great diversity of personnel in the governing bodies of college sanitation. Sanitation is a subject of rapid growth and many phases, statistical, bacteriological, chemical, epidemiological, and medical, and no miscellaneous group can establish and direct a working plan of college sanitation which will meet the standards of modern sanitary science. It should be unnecessary to say that this work should be in the hands of a board, primarily informed in sanitary science, and adequately provided with laboratory facilities and assistants, secondarily in touch with the various academic and business administrators of the college, who should accept and enforce its decisions, as the decisions of a municipal board of health are accepted and enforced by the town or city authorities. The largest concurrence in personnel of sanitary administration is that of 15 per cent of the colleges replying, where sanitary authority is vested in the "Superintendent or Committee on Buildings and Grounds." Next comes "Committee on Student Health"—10 per cent. Then "City Authorities"—8 per cent. The remaining 30 replies are too varied to be classified except as in the above table, and include such items as "President," "Dean," "Assistant Treasurer," "Firm of Architects," "Department of Physical Education," etc.

Concluding Comment.

At the outset we stated what would seem to be the self-evident responsibilities of the college in maintaining a certain standard of health protection. For two reasons are these responsibilities especially weighty in the case of the college above all ordinary communities. First, because, granting the college a high and influential position before the public, it must not be remiss as an exemplar of hygiene and sanitation, fields in which theory is glaringly futile when not combined with practice.

Second, the college is in a position unique in opportunities for control and education by example in health matters. Effective hygiene and sanitation must find a place in college life to prevent the large economic loss due to physical deterioration and transmissible disease at the time when soundly established health, physical and mental, and freedom from interruption are most essential to the individual's success and to his later value to the community.

On the grounds of the data reviewed in this study and in view of its opportunities, it can hardly be said that the colleges excell the best examples of municipal health administration. It cannot be that their physical standards of admission are having more than a fraction of their possible effectiveness. Arrangements for supervised and restricted exercise for physically deficient students are not made in two thirds of the colleges replying. Instruction in personal hygiene is not followed up to any extent for concrete results either by individual observation and advice or by correlation with college vital statistics. The standards for water

and milk supply are low in a large proportion of instances. Ventilation is a closed book. Off-campus living conditions are not supervised in an inexcusably large proportion of instances. Health administration proves to be haphazard and often non-expert.

The possibilities of a rapid improvement probably lie in the reorganization, or in the creation of the college health board, to supplement and correlate health instruction, medical service and college sanitation. Such plans have been much under discussion of late (Anderson, 1917; Winslow, 1916). Meylan, some years ago (Meylan, 1910) called attention to the tendency of the departments of physical education, or of hygiene, however they are called, to enlarge their fields to cover practically all of college sanitation. Local factors must determine whether the coördination of college hygiene and sanitation through the department of hygiene and physical education is the arrangement involving the least friction and productive of the best results. It matters little whether the health organization is so arranged or whether the college hospital staff, or some professional department of sanitation and public health forms the nucleus of the organization, provided there exists live coöperation regardless of precedence, and a real desire for demonstrable results. When the department of hygiene and physical education can advantageously assume this function, with it, as has been pointed out by others, should be associated the teaching staffs and the technological experts of the departments of chemistry, bacteriology, and statistics, together with the physician in charge of the college hospital. From them should come counsel and decisions which may be put into effect by the administrative officers of the college sitting as *ex officiis* members of the board. The college board of health is certainly under a moral and usually a legal obligation to work in close harmony with the local municipal board of health, especially in reporting and maintaining strict quarantine in all cases of diseases dangerous to the public health according to the regulation of the state and local sanitary code. Further, it is to its great advantage in the long run so to coöperate.

The college board of health must be alive not only to the technique of applied bacteriology and of sanitary science but to the present day spirit preached by the leaders in health conservation—the spirit which points to further progress not merely in the external enforcement of sanitary regulations, but in the education of the individual to a sense of responsibility in developing and maintaining his personal health and strength, and in protecting the health of his neighbors—a sense of actual membership in the larger board of health, the community as a whole.

These conclusions apply to general conditions in college hygiene and sanitation. The few exceptions of all-round, enlightened, and modern college sanitary organization and administration are well known. It is to be hoped that their leadership will be followed in the near future by a large majority of American colleges. The concept of national vitality has come, during the past year or two, to have a real meaning even in the popular mind. The colleges must set the pace for the lower schools and for the country as a whole in providing the training and environment necessary to the normal growth, mental and physical, of the nation's youth.

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CHANGE IN SEASONAL DISTRIBUTION OF DISEASE IN CHICAGO; AND RELATION OF INFLUENZA THERETO.

W. A. EVANS, M. D., *Chicago, Ill.*

Against a decline in prevalence of many diseases and a generally decreasing mortality in the past fifty years, the pneumonia-bronchitis-influenza rate is today higher than in 1871. It is indeed the only bacterial group of maladies the prevalence of which has not diminished.

THE 1889–90 influenza epidemic began in Chicago during the first week in January, 1890. It was at its worst during the last week of that month, but conditions did not become normal until late spring of that year. As judged by the death rate conditions remained normal until the follow-

ing winter. The epidemic returned about March, 1891, and for eight weeks the death rate was 25 per cent higher per week than during the worst week in 1890. Conditions did not become normal until late spring. Further study showed that the death rate was abnormally high until 1894 and that the excess was all due to deaths occurring during the winter and spring.

A study of the deaths in 1890–93 led me to investigate the seasonal distribution of deaths in Chicago since 1871. From this study I learned that there has

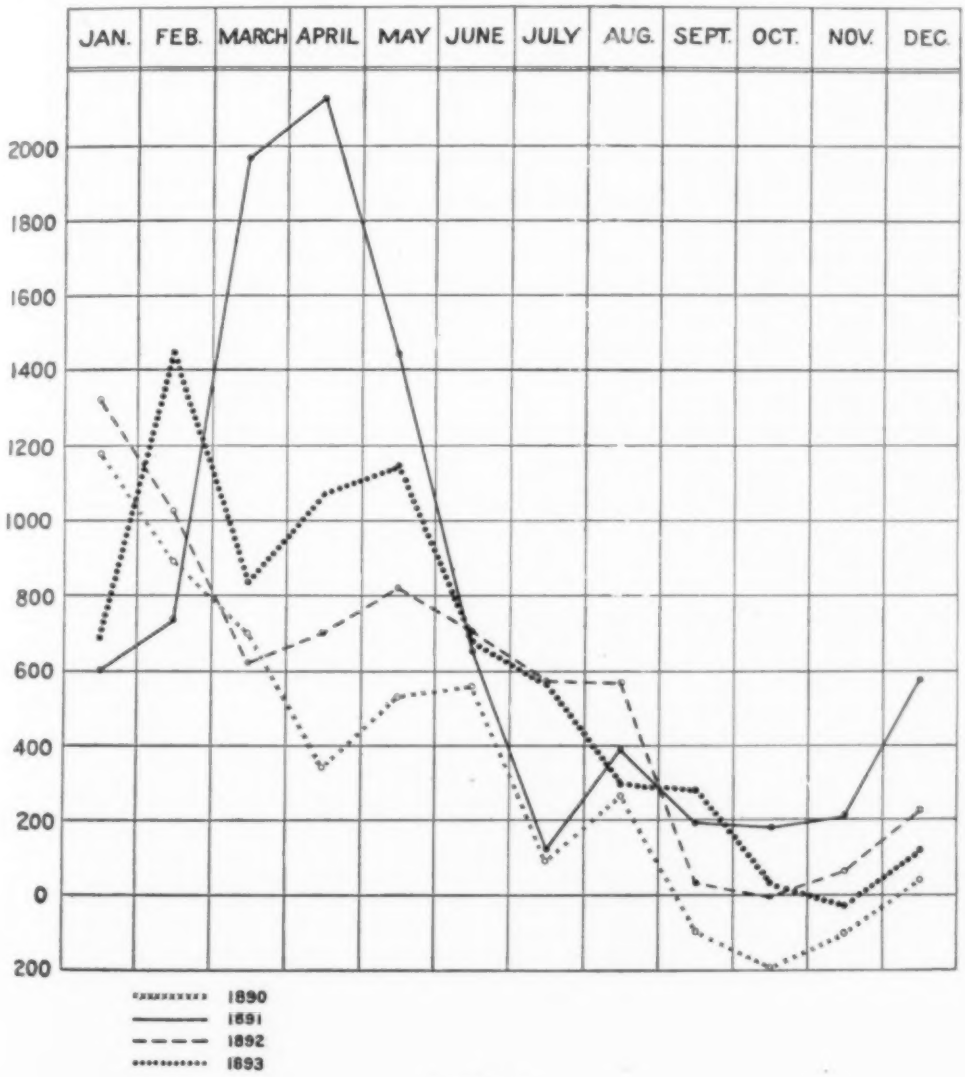


CHART I.

This chart indicates deaths from all causes by months as compared with expected deaths on the basis of deaths in 1889 plus 5.2 per cent each year for increase in population. The zero line represents expected deaths. The curves below the zero line indicate the number of deaths less than the expected number. The curves are for Chicago.

been a radical change in the prevalence of disease in Chicago during the last 46 years and that the most clearly defined step in this change was in the decade in which the 1889–93 epidemic occurred. In all probability the same change has occurred elsewhere throughout the United States, but this study covers conditions in Chicago only.

The study began with 1871 because the records for the years prior to the great fire are not very reliable. I presume for a number of years prior to that date they are reasonably accurate as to gross number of deaths a year, but not for other details. The first period, therefore, embraces only nine years, 1871–79. In order to escape the influence of the 1918 epidemic the 1910–17 period embraces only eight years.

The tables and charts dealing with change in the seasonal prevalence of disease as shown by the deaths are based on the total number of deaths. The population is approximately the same in the different months of the year and all the tables and charts are intended to convey is the healthfulness of the different months. It will be noticed that in 1871–79 in each of the first six months there are about the same number of deaths. In

TABLE I.

AVERAGE NUMBER OF DEATHS EACH MONTH BY DECADES—1871 TO 1917 INCLUSIVE.

	1871–79	1880–89	1890–99	1900–09	1910–17
Jan.	600	1,107	2,181	2,574	3,129
Feb.	524	977	2,010	2,446	3,061
Mar.	598	1,112	2,253	2,616	3,441
Apr.	580	1,091	2,214	2,528	3,103
May	571	1,076	2,023	2,403	2,980
June	589	1,022	1,809	1,976	2,535
July	1,201	1,023	2,443	2,245	2,732
Aug.	1,097	1,371	2,204	2,417	2,224
Sept.	782	1,115	1,880	2,249	2,650
Oct.	627	1,021	1,807	2,113	2,572
Nov.	578	1,001	1,700	2,112	2,582
Dec.	612	1,081	1,910	2,495	3,227

TABLE II.

	Winter	Summer
1870–79	4,875	3,271
1880–89	7,120	6,460
1890–99	11,845	12,595
1900–09	12,953	15,063
1910–17	16,732	18,931

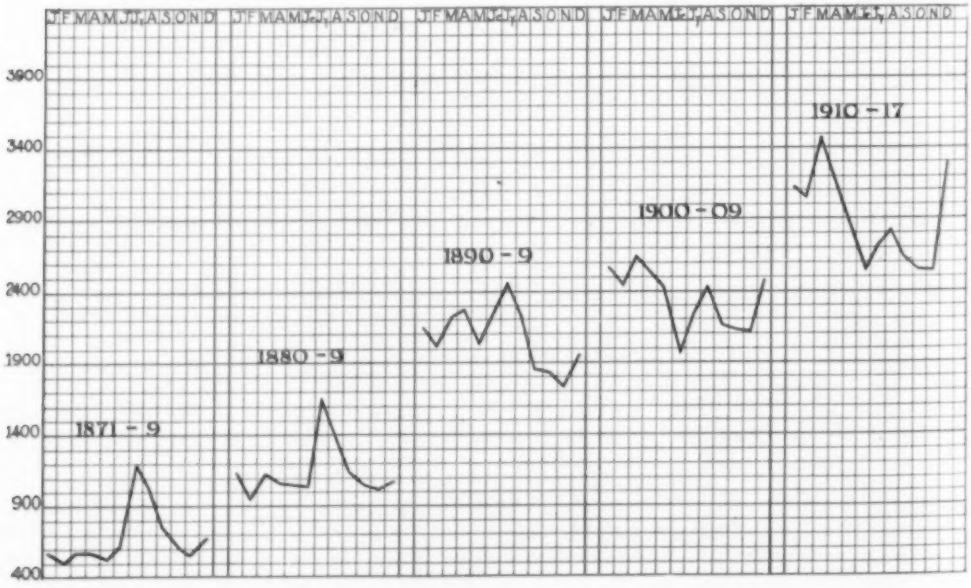


CHART II.

Distribution of total deaths by months (averages for each decade) 1871 to 1917, inclusive.

July there is a very sharp rise. August had almost as many deaths, September somewhat fewer, October, November and December having almost the same number of deaths each month as had January and the five following months. In 1880 the July-August-September curve is almost as high, but it will be noticed that there is a slight spring rise also.

There is practically no difference between the curve for 1880–89 and that for 1871–79. The curve for the decade beginning with the influenza epidemic of 1890–93 is entirely different. There is a spring rise almost as high as the July rise. August is lower than March–April and September is lower than any spring month. In 1900–09 the July-August rise does not reach higher than the May level and the December-April curve is the only real hump. In 1910–17 the March-April hump is the striking feature in the curve.

The change is best noted by comparing 1871–79 with 1910–17. It will also be seen that the most definite step in the change occurred in 1890–99. By dividing the year into two parts, June, July, August, September, October and November being classed as summer–autumn and December, January, February, March, April and May as winter–spring and comparing these seasons by decades we get another presentation of the same change.

TABLE III.

	Winter	Summer
1871	2,796	4,180
1872	4,039	6,117
1873	3,770	5,785
1874	2,982	5,043
1875	3,399	4,500
1876	3,606	4,967
1877	3,741	4,285
1878	3,247	4,175
1879	3,785	4,829
1880	4,857	5,605
1881	6,170	7,931
1882	6,833	6,401
1883	5,552	6,003
1884	5,745	6,625
1885	6,088	6,388
1886	6,572	7,127
1887	7,361	8,048
1888	7,860	7,912
1889	7,565	9,381
1890	11,501	10,355
1891	15,671	12,083
1892	13,237	12,982
1893	13,684	13,399
1894	11,280	12,612
1895	12,207	12,012
1896	11,692	11,565
1897	10,948	10,861
1898	12,178	10,615
1899	13,539	11,964
1900	13,602	11,339
1901	12,459	11,947
1902	13,830	12,625
1903	16,074	12,844
1904	14,739	11,572
1905	14,226	12,982
1906	15,255	13,793
1907	17,688	13,570
1908	16,256	14,130
1909	16,504	14,792
1910	17,500	15,741
1911	17,617	14,954
1912	18,403	15,631
1913	18,983	16,315
1914	18,932	15,020
1915	19,169	15,725
1916	19,585	21,263
1917	16,719	17,764

Table II shows the number of deaths in each season for each of the five decades.

Table III shows the number of deaths in each season for each year from 1871 to 1917.

Tables III and IV show that prior to 1890 the number of deaths was always higher except in 1882. Since 1890 the winter rate has always been the higher except in 1894.

TABLE IV.

General Mortality Rate per 1,000 of Population.

1871–79	20.88
1880–89	20.649
1890–99	18.473
1900–09	14.676
1910–17	14.775

TABLE V.

TYPHOID MORTALITY RATE PER 100,000 OF POPULATION.

1871–79	59.5
1880–89	61.4
1890–99	62.6
1900–09	22.3
1910–17	7.5

TABLE VI.

INFANT MORTALITY RATE PER 1,000 POPULATION ALL AGES.

1870–79	7.24
1880–89	6.38
1890–99	5.16
1900–09	2.99
1910–17	2.77

(NOTE. Birth registration in Chicago is not complete.)

TABLE VII.

SCARLET FEVER DEATH RATE PER 10,000 OF POPULATION.

1871–79	7.55
1880–89	4.03
1890–99	1.85
1900–09	1.716
1910–17	1.892

TABLE VIII.

DIPHTHERIA DEATH RATE PER 10,000 OF POPULATION.

1871–79	10.9
1880–89	17.41
1890–99	9.34
1900–09	2.95
1910–19	3.61

TABLE IX.

DEATH RATE FROM PNEUMONIA, BRONCHITIS AND INFLUENZA PER 10,000 OF POPULATION.

1871–79	15.25
1880–89	21.45
1890–99	26.21
1900–10	25.642
1910–17	21.18

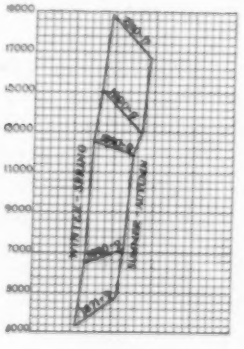


CHART III.

Average number of deaths each year of decade by season, Winter – Spring and Summer–Autumn.

An analysis of some of the more important causes of death throws additional light. Since 1871 there has been a fairly regular decline in the general death rate as shown in Table IV and Chart V. Likewise there has been a decline in the death rate from typhoid fever and the infant mortality rate (Tables V and VI, Chart V). But not all the decrease has been in the bacterial diseases which produce deaths in the main in the summer-autumn season. Tables VII and VIII and Chart V show a like decline in the rates from scarlet fever and diphtheria. When we come to pneumonia, bronchitis and influenza we find another story. On account of the difficulty in diagnosing pneumonia, bronchitis and influenza these three are combined and treated as one disease.

Table IX and Chart V show that the curve for acute respiratory infections went very high in 1890 and that while it has fallen somewhat since that time, the death rate from this group is much higher now than it was in 1871–79. The only bacterial-caused disease in the entire category which is higher now is the pneumonia-bronchitis-influenza-group. Such proof as there is that the influenza epidemic of 1890–93 changed the human host indicates that immunity was conferred, not that susceptibility has been increased.

In 1918 the number of deaths of people over 50 was no greater than in 1917, 13,458 as compared with 13,497. The reports from elsewhere are to the same effect. The disease everywhere spared persons old enough to have gone through the epidemic of 1890–93. This fact was not true in 1890–93. Chart VII shows that in that epidemic old people died at a rate even greater increase over expectancy than was the case with the younger ones. A more rational conclusion is that the bacteria responsible for the

acute diseases of the respiratory tract are undergoing change and that the most signal manifestation of this change occurred in the great influenza decade of 1890.

I append Chart VI showing the death rate by months of 1918. The exceedingly high spring rise presaged the autumn epidemic. Just the relation of this rise to the October epidemic it is impossible to say. Similar rises in death rates occurring between 1916 and 1918 in different parts of the country have been termed influenza epidemics by different writers. The relation of the streptococci pneumococci to influenza will remain a fruitful source of study for a long time.

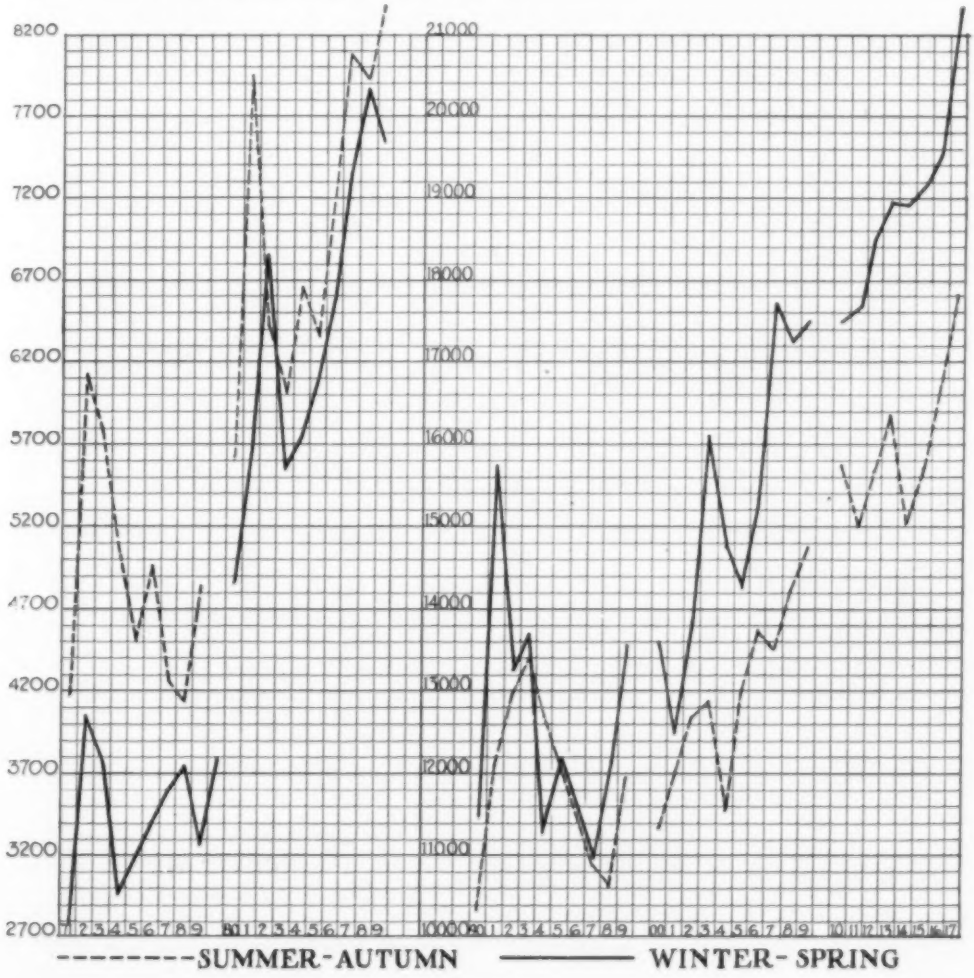


CHART IV.

Deaths by seasons, 1871–1917, Summer–Autumn and Winter–Spring.

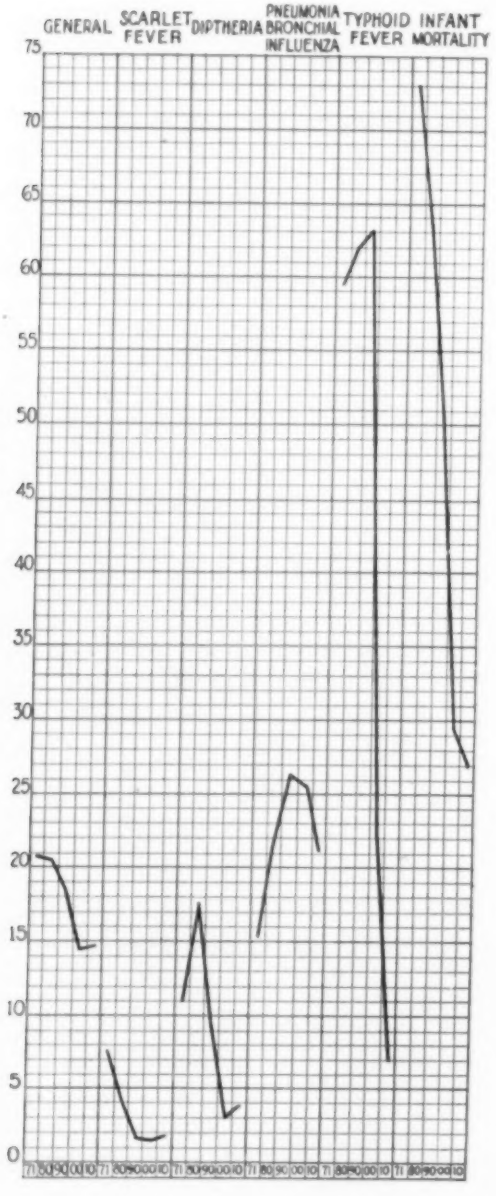


CHART V.

Curves of death rates for certain diseases. Averages by ten-year periods, 1871–1917.

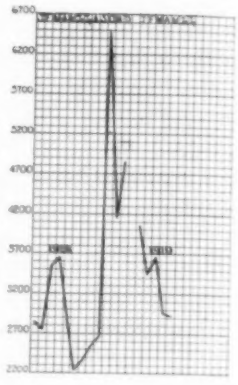


CHART VI.

Deaths in 1918–1919 by months. Exceptionally high Spring rise. Deaths in 1919 exceed those of same months in 1918.

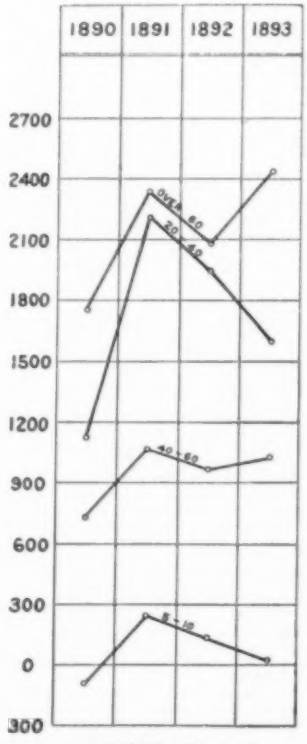


CHART VII.

This chart shows deaths for four years in certain age groups as compared with expected deaths on basis of deaths in 1889 plus 5.2 per cent each year for increase in population. The zero line represents expected deaths. The horizontal lines above zero line indicate numbers of death above the expected. Those below zero line indicate numbers of deaths below the expected. Chicago.

THE FIGHT AGAINST TUBERCULOSIS IN FRANCE.*

SELSKAR M. GUNN.
Associate Director, Commission for the Prevention of Tuberculosis in France, Paris, France.

IT is not without some hesitation that I have finally concluded to speak to you of tuberculosis, and especially of the work that is under way in France by the Anti-tuberculosis Commission sent by the Rockefeller Foundation.

There are many in France with greater authority than I have, who could treat this subject much more worthily. This is because you are, indeed, the country of of the great physiologists.

What is tuberculosis? It is perhaps easier to answer this with figures than with words. For France, alone, a man dies every six minutes, more than 80,000 a year; for the whole world, 2,000,000 human lives a year; these are its ravages. One of your most popular authorities, M. Charles Nordmann, wrote recently in the *Revue des Deux Mondes:* "Statistics show that tuberculosis has killed twice as many men in the eighteenth and nineteenth centuries as did the enormous wars of these times."

If one accepts average statistics of tuberculosis mortality, it is easy to calculate today that 4,000,000 of French people, who live among us are condemned to die of tuberculosis. This is, indeed, three times as many victims as the war has demanded in your beautiful country.

This scourge is enormous! Its field is the world, and the lives that it extinguishes are counted by millions! How is it possible to estimate the loss which the country sustains through the death of men whose lives are at least fifteen years shorter than those of others? For America, we have estimated this loss at 6,000,000,000 francs per year.

It is true that France is not the only battlefield of the "white plague," but, it is, nevertheless, one of the favorite fields

As Peace is dawning an inquieting cloud menaces France. It is Tuberculosis. It must be vanquished.

of battle, and one in which the disease demands a vast number of lives. Statistics of tuberculosis mortality are of recent date and it is possible to follow with precision, for a few years only, its curve of occurrence.

Per thousand of population in 1906, the average mortality from tuberculosis was in France 2.22. This enormous ratio, one of the strongest in the world, had not

* Professor Gunn, who promised to the JOURNAL a story of the great work against tuberculosis in France, sends for this purpose his article in the wide-awake French magazine, *Je Sais Tout.* The translation has been made with his consent in the office of the JOURNAL and by its staff.

declined much by the time of the breaking out of the great European war, since in 1915 it remained still at 2.15. At the same time in England, the tuberculosis mortality, per thousand inhabitants, was 1.65 in 1906, while in 1913 it was 1.35, a diminution of about one-fifth.

In the United States where notification is obligatory in thirty-six states for all forms of tuberculosis, and in eight others for pulmonary tuberculosis, the decline has been practically the same, and the mortality has dropped between 1906 and 1913 from 1.80 to 1.48. If you apply this proportion to the millions of individuals who die of tuberculosis, you will see that the diminution of these decimals is equivalent to hundreds of thousands of human lives saved. To refer again to the words of M. Nordmann, about fifteen years hence, the mortality from tuberculosis in the United States will be only about one-half what it was in 1906.

It may seem strange, at first sight, that tuberculosis kills proportionally more persons in France than in America or in England, because the climate of your country is more equable and more healthful than the climate of either of the two other countries.

It seems strange that for 21 Frenchmen who died of this disease in 1913, only 13 Englishmen died. Such a result relates itself to carelessness in the observation of the elementary rules of hygiene and indicates the presence of a group of tuberculizing factors such as housing, clothing, furniture, crowding in living rooms, habits and professions.

But what is even more serious is to realize that although the mortality of this disease diminishes regularly in England, conditions remain almost stationary in France, which is, in addition, the country most deeply stricken. And now the war has come, which simply aggravates this situation, already perilous.

On account of the war, the terrible malady, far from diminishing, has increased greatly in France. It could hardly be otherwise. The country, which has mobilized about 8,000,000 men out of a population of 38,000,000, has been obliged to assemble side by side, the healthy and the ill, and among the latter, the pre-tuberculous and those actually having the disease. The results of the hardships of the war have been to exhaust rapidly the already diminishing strength of those who are physically weak, and after a while, the army was obliged to reject them by thousands. These tuberculates all became just so many foci for the dissemination of the terrible scourge.

I should say, right here, that men were found ready immediately to combat this danger in France, and thanks to the united efforts of the Ministers of the Interior and War, there were created at once department committees to care for the health of the military tuberculates, and sanatoria were opened for their accommodation.

But the evil marched very quickly, despite this kind of effort. Not only the pre-tuberculosis, but the light cases returned and became carriers of the deadly germs, and besides all the weak men of your unfortunate prisoners who suffered in Germany from cold and famine, who were exhausted there in unconscionable hardships imposed on them by the Germans, subjected to forced labor, and oftentimes at the edge of famine. All those beings who by millions were systematically robbed of their vitality by Germany, returned to France either tubercular themselves, or predisposed to it. But these do not comprise all the causes. It is necessary to add the extraordinary multiplication of camp followers who have overpopulated the cities bringing the ills that accompany congestion; it is necessary to add the insidious work of alcoholism

which, as Landouzy said, continues to "make the bed of tuberculosis." Then it is necessary to add the wide-spread ignorance which prevails among the masses, and which is the reason that the germ of the disease, demanding so many victims, has been treated with such indifference.

At the coming of this peril which menaces the life of France, medical authorities gave the alarm. Good advice was offered and excellent measures have been taken.

This is not the place, nor have I the knowledge to set forth in its details the triple action, scientific, administrative, and parliamentary, undertaken in France, in the anti-tuberculosis struggle.

As early as 1865, the experiment of Jean-Antoine Villemin, Professor of Clinics at the Military Medical School of Val-de-Grace —one of the greatest names in all French medicine,—revealed the contagiousness of tuberculosis. He made an experimental demonstration of truths suggested as early as the sixteenth century, in Italy by Frascator, and in France by du Laurance, physician of Henry IV, who affirmed that the suppurating matter was susceptible of contaminating healthy subjects. It is a matter of history also, that in 1781, Philip IV, King of Naples, of Jerusalem and of Sicily, proclaimed the contagiousness of consumption in the streets and passage-ways of Naples, and gave the order to the physicians "to declare consumptives, after the objects which they used were burned and their houses disinfected, to be delinquents with punishment in prison and a fine of a hundred ducats, or exile from the kingdom."

Nineteen years after Villemin, Robert Koch, discovered, under the form of a bacillus which bears his name, the microbe which is the contagion bearer of tuberculosis. To demonstrate tuberculosis contagious was at the the same time to proclaim it preventable.

Tuberculosis congresses were held in Paris in 1888, 1891, 1893, 1898 and 1905 under the management of your best specialists: Professors Chauveau, Villemin, Verneuil, Nocard and Herard. These congresses demonstrated that the distribution of tuberculosis resulted from the development of modern social methods, men living today in a way very much more congested than formerly. Expressing this idea, Dr. Landouzy said: "Sociability travels so fast that hygiene, quickly distanced, cannot follow."

The Boche eagle will be conquered. Tuberculosis must be also.

It would appear that, for a malady the social character of which is indisputable, it is necessary to oppose it with social therapeutics.

On the eve of the war, the anti-tuberculosis equipment of the French, according to a report of M. Fillassier, in December, 1913, was composed of 46 anti-tuberculosis dispensaries, of which 28 were in Paris, and the others scattered

through 15 departments. At the same time, M. Delbruck, German Minister of the Interior, was able to declare at the 1913 Congress of Tuberculosis that his empire could count 1,500 dispensaries or smaller organizations.

But since the war, new forces have been aroused, and France is ready to accomplish, in the face of the imminent danger of tuberculosis, the work which can give excellent results if it is carried to the end. On March 21, 1915, Deputy André Honorat invited the government to assure to the soldiers rescued from tuberculosis the proper education and the necessary care. M. Léon Bourgeois secured from the Ministers of War and Interior an agreement as to the terms on which the latter would assume the responsibility of rehabilitating soldiers formerly tuberculous, while the Minister of War agreed to allow them a daily indemnity of 3 francs for a term of three months.

Hygiene ! Well, well ! As for me, I always dust dry.

On August 22, 1915, M. Brissac, Director of Charities and Social Hygiene in the Ministry of the Interior, presented to the Permanent Tuberculosis Commission a report which was adopted, and which contained a plan of organization of sanatoriums destined to care for the tuberculous.

The 18th of October, the same year, on the motion of M. Honorat, a law was enacted which appropriated 2,000,000 francs for the same object, and the Minister of War established regional sanitary hospitals intended to care for tuberculates, whose acute or sub-acute condition necessitated immediate and continuous attention. At length, on the first of April, 1916, under the patronage of the President of the Republic, there was created a National Committee of Assistance to Military Tuberculates, and in the large cities department committees, all of them financed by the respective local governments. Organization was immediate. It was necessary, for the danger was increasing very rapidly.

On December 14, 1917, at the session of the Senate, the Sub-Secretary of State in the Division of Health, furnished these figures: "Between August 2, 1914, and October 31, 1917, 89,430 military men were rescued from pulmonary tuberculosis. In his report to the General Assembly of the Departmental Committees at the end of 1918, Dr. Léon Bernard stated that 23,681 of these men cured of tuberculosis—9,216 for the Department of the Seine—had been aided by the departmental committees."

Such figures as these will explain to you sufficiently why we have been encouraged to bring our contribution also, small though it may seem, to the fight which France is now engaged in against tuberculosis.

America loves France, and this feeling dates back for centuries. Before the conscience of the whole of our country realized the necessity of taking part in our battles at the front, the United States understood that it was necessary without delay to take part in the struggle against tuberculosis, a name more terrible even, than that of the Germans themselves. That is how in February, 1917, the Rockefeller Foundation conceived the idea of sending as a commissioner Dr. Hermann M. Biggs of New York, to study the tuberculosis condition in France.

In the spring of the same year Doctor Biggs sent a report which determined the sending to France of a commission charged to coöperate with the French government towards the development of a Franco-American anti-tuberculosis plan. There was no time lost, for in July, 1917, the Commission for the Prevention of Tuberculosis in France landed at Bordeaux, accompanied by Dr. Livingston Farrand, President of the University of Colorado, one of the most important names in American sanitary science.

We do not need to tell you what you know already better than we. We simply ask you to confide to us a part of your growing burden, and to accept our moral aid, and our practical assistance in all sorts of ways. This is an assistance which will come from twenty years of experience, and twenty years of fruitful results secured through these methods in America.

In the United States, we have succeeded by simple methods of practical hygiene, possible to everybody, in causing the mortality from tuberculosis to fall more than half in twenty-five years, in great cities like New York, Boston, and Philadelphia. To obtain these results, how did we go to work? We have cared for the sick people as well as possible, but

Wash your hands before meals and on coming from the W. C.

above all we have intensified and extended methods of prevention.

It has been our object to establish protection against human tuberculosis. In order to do that, it is necessary to teach the people who had not known it, what this disease is, and how dangerous it is because it is invisible; how it attacks the individual and if one has been attacked, how to realize this, and how to escape from the malady. It is necessary to teach, also, the doctrine of cleanliness, of fresh air, and sunlight; these are good medicines, the very best. In order to teach a population this catechism of health, and to secure their observance of it, it is necessary to appeal to them with methods which will be supported by material results. M. André Honorat himself has very well defined a course in his report presented to the Chamber in 1916, noting that the requirements are:

"Dispensaries to look up tuberculates where they live, to furnish to them the care that their condition of health demands, and to watch that the malady does not transmit itself from them to the group of people in which they live.

"Sanatoria to cure and to educate the sick, to assure that on their return to family life and social life they can do this without peril for these persons or risk for themselves, and be able, little by little, to take up again the normal life. In effect, this is an institution of insurance against the disease which can furnish aid to those in reduced circumstances so that certain individuals, above all, the poorest in the villages shall not be condemned to a loss of the care which can improve their state, and become, lacking this care, an element of danger for the family and for the community in which they live."

To apply these methods to this program, we have chosen a field for experiment, divided into two sections. The first is at Paris, the XIX arrondissement, very populous, inhabitated by people of moderate means, where conditions of hygiene are difficult to realize—three dispensaries are at work there, and a fourth will open shortly. The second district is in Eure-et-Loir, where very shortly twenty-six dispensaries will be at work. The medical service of the commission is under the direction of Dr. Bernard L. Wyatt, assisted by Dr. W. C. Klotz.

In order to realize our program, we have the fraternal aid of the American Red Cross, which concerns itself most particularly with the equipment of hospitals, sanatoria, and gives assistance to the families of the poor.

As for ourselves, with the assistance of the French departmental committees, the groups of local authorities and the general good will, we have strengthened our service of propaganda and extended our work.

Now about the management of our dispensaries. The dispensary is the center of action; it is a principal agent; it is the infirmary to which one can send for an instructing nurse. Her rôle is complex. She looks after the filling of medical prescriptions, and to the observation of the indispensable rules of hygiene; but she has for her mission also to investigate the section to which she is attached, not only to find tuberculates there, but especially to become acquainted with their environment, their families, their friends, and and their neighbors, to determine the healthfulness of their homes, etc. This is necessary. If the progress of tuberculosis is to be checked, it is necessary to fight it in the individual attacked, and it is necessary, also, to prevent it from invading and infecting individuals still healthy.

To protect from evil effects everyone possible is the work of prophylaxy, and this also is the rôle of the visiting nurse. It is because of this that visiting nurses take note of all those who approach a tuberculate who is on his way to the dispensary.

As soon as he arrives there, he is thoroughly examined; his lungs and his throat are the objects of special attention. Questions are asked him with reference to preceding symptoms, as well as those existing, and then, according to the progress of the malady, he is put in one class or another. Some classes are given over to the dispensary where treatment, medicine and aid are given to them freely; others more deeply infected, but perhaps more easily benefited, are sent to the sanatoria; finally, the acute cases are immediately hospitalized in beds put at the disposition of the dispensary at the different hospitals.

It is necessary to attach great importance to the educational campaign which is a portion of the work. It is necessary

to consider in undertaking the problem of teaching that there is a psychological difference existing between French people and the Americans. It has been necessary to adapt to the French temperament the methods of reclamation, publicity and circulation, already utilized in America with profit. They have solved the difficulties.

It is always with pleasure that I have helped in the many towns—more than 150 up to now—in which I have assisted in explaining the subject to the people who visit our traveling exhibitions, conferences, and our movie shows.

Up to now, we have visited thirteen departments: l'Eure-et-Loir, le Loir-et-Cher, l'Indre-et-Loire, l'Ille-et-Vilaine, l'Allier, les Côtes-du-Nord, le Finistère, la Loire-Inférieure, le Cher, la Nièvre, la Gironde, etc. A crowd of auditors that has been estimated at more than 300,000 has received good words, and has listened to them with attention.

More than 1,750 lectures with films and many conferences have told the young as well as the old people what tuberculosis is, what its dangers are, and how to avoid them.

As to the number of pamphlets, posters, and post cards of all kinds that we have scattered in the districts through which we have gone, they surpass two million. Today, we are in the process of applying to l'Eure-et-Loir an intensive method of anti-tuberculosis prophylaxis, which if it gives the results that we expect should become, we think, worth while for all the departments of France. Four central dispensaries, and twenty-two secondary dispensaries are at work, or ready to begin, and this means each capital town in the department is already provided with one, or soon will be. Nine doctors give continual consultations, and twenty-one visiting nurses patrol the different sectors.

If I speak especially about our Parisian organization or our organization in Eure-et-Loir, it is because they are the fields of experience which permits us to adapt most completely to the habits and temperament of the French our prophylactic methods. Nevertheless, it is not to be believed that our activity in France stops there. I have already said that we consider our work of propaganda as a most important portion of the American program. My colleagues and friends, Dr. Bruno and Captain F. Wing, are pioneers who are traveling throughout all France to sow everywhere the good seed of anti-tuberculosis education.

Their purpose is to work always through local authorities and, supported by private initiative, accomplish what they wish. Their contribution consists above all, in stimulating and attracting the good will of the people, and educating them so as to coöperate with them towards a useful realization, establishing centers in places where French efforts have been scarce, elaborating programs, and plans, effecting useful, technical consultations, and in fact making every anti-tuberculosis organization a union, material, financial, moral and psychological. It is no more than a duty to state here that in all the departments through which they have passed these two men have always united their efforts to those of the departmental committees.

Our efforts are equally active toward the establishing of visiting nurses. There also we have worked always in harmony with French organizations. We have agreed to pay the costs of instructing visiting nurses in three special schools of Paris: de la Glacière, des Infirmières-Visiteuses et de l'École de Mlle. Chaptal. At Bordeaux also a school is opened which has begun with seven pupil nurses. Altogether, we have furnished scholarships for sixty-one visiting nurses who were placed under the direction of Miss

Crowell, and who operated not only in the dispensaries of d'Eure-et-Loir and Paris, but who are sent by us to various French dispensaries on request of the latter.

All that we have done for you we have done with good will, we Americans, and we have done only that which you would have done for us. We have only one desire, and that is that the effort which we bring to the anti-tuberculosis war in France shall be fruitful in its results.

It will be sufficient for us to feel that we have served to the extent of our ability, the necessary and beautiful cause of humanity.

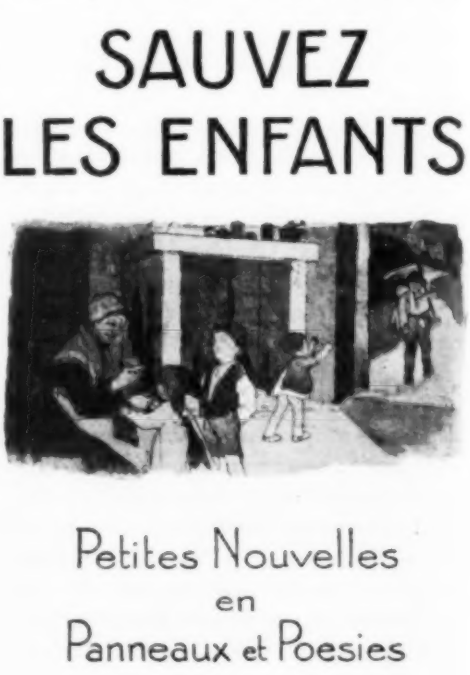
Explanatory Notes on the Illustrations.

Professor Gunn refers incidentally to the pamphlets, posters and post cards that have been distributed—2,000,000 of them—by the Commission. The story would, however, be very incomplete without some further notice of these, so important have they been and so cunningly fitted to the French psychology. Some of the pictures have been reproduced in the Journal within the past eighteen months, but there are so many new members since that time that there seems to be no harm in repeating one or two of them.

Several stirring posters were displayed during the campaigns of the commission, but no one of them more telling than that of the "Two Scourges, the Boche and Tuberculosis." This with its dying, impaled Teutonic eagle and its prophetic legend, "The German eagle will be vanquished; tuberculosis must be also," raised a storm of protest in Germany into which some copies filtered. The newest poster, not hitherto reproduced here, "The Threatening Cloud," appeals to an artistic people.

In another group of "literature" is the picture postal in colors of which many thousand sets were circulated. These are in French vein and present some spirited drawing coupled with an elementary lesson in hygiene. "Wash your hands before meals and after coming from the W. C.," is the legend on the one here shown, the French understanding the initials quite as well as they do the mystic, "No. 100," of their office buildings. Most attractive also are the postcard sets, a dozen subjects to the pack, in black outline, of which the youngster with the dry, feather duster is a sample.

Later than these and not hitherto reproduced in this country are two items, a folder and a pamphlet. The folder is in colors and has for its legend, "Save the Children; Bits of News in Panels and Poems." It seems worth while to give two of the pages and the title. Unfortunately the colors do not lend them-



selves perfectly to reproduction and the striking contrast of the red cow against the village church green is in part lost.

The latest of all the publications, which have included parchesi games and primers for the kiddies and literature for the grown-ups, are two bilingual pamphlets, intended for circulation in the provinces of Alsace and Lorraine, where German has been obligatory the past forty years under Teuton autocracy. They convey their lessons in German as well as French and illustrate with new pictures as well as old the truths of hygiene.

LA TUBERCULOSE ET LE LAIT

Laissez boire a l'enfant
le lait qu'il veut avoir,
C'est l'aliment rêvé
le matin et le soir.

D'une vache malade
et tuberculeuse,
L'enfant pourra prendre
la maladie affreuse.

Si l'on ne lui bout pas
le lait soigneusement,
Une courte ébullition
suffira pleinement.

Vous devez faire bouillir le lait

In the drinking of milk
Let the children delight;
It is food that's ideal
For morning or night.

But poor milk from sick cows
Of tuberculous trend
May infect the poor child
With disease in the end.

If one is not certain
That his milk is pure,
A very short boiling
Will make it secure.

Always boil the milk.

DU GRAND AIR DANS LES ÉCOLES

A tout enfant chétif,
malade, anémique,
Donnez le grand air frais
comme seul tonique.

Et là où vous vivez,
un bon endroit cherchez,
Pour l'école en plein air
sans faute y installer.

Les écoliers
venant étudier en ce lieu
Grandiront plus vite
et s'instruiront bien mieux.

"Le grand air c'est la santé, la santé c'est la vie"

For the child that is sick,
Pale and worse for the wear,
The tonic to give him
Is lots of fresh air.

Fresh air is health
And health is life.

And wherever you live
It should be your first rule
To look up a site
For a fine fresh-air school.

The scholars who study
In this out-door place
Will grow much more quickly
And win learning's race.

This free translation is by the JOURNAL staff.

HEALTH WORK IN SOUTHERN STATES.

On the occasion of the meeting of the American Public Health Association in New Orleans the JOURNAL is setting forth some of the accomplishments of State Health Departments of Southern States. Four of the States are here represented in brief, official summaries.

PRESENT AND FUTURE OF PUBLIC HEALTH WORK IN KENTUCKY.

ARTHUR T. MCCORMACK, A. M., M. D.,
Secretary of the State Board of Health of Kentucky, and Recently Chief Medical Officer of the Canal Zone.

THE State Board of Health of Kentucky was created in 1898 to meet the emergency of the disastrous epidemic of yellow fever which rapidly spread over the entire South and seriously menaced the whole United States in that and the succeeding year. Hurriedly drawn, the law was very imperfect and practically without appropriation, but with funds borrowed upon the personal credit of its members, the board managed the interests entrusted to it so successfully that succeeding sessions of the Legislature and, still more, a long and unbroken line of Appellate Court decisions steadily so extended the powers and duties of the board and its affiliated county and city boards that soon they had the entire police power of the commonwealth back of the comprehensive rules and regulations they were from the first authorized to make.

Later, when medical education had fallen to such a low ebb, and blatant quackery had gained such a foothold here and in the Union, as to bring reproach upon the profession, which must lead in all effective health reform, a strong medical law was passed, with provisions ensuring fair treatment for all systems of practice. Its administration placed in the hands of the board, with a resulting merger movement fairly satisfactory to almost all concerned. Under this arrangement the Medical Department of the University of Louisville inherited the properties and good will of the six schools theretofore existing in the state, and soon, in addition to the other advantages, not an open or advertising charlatan operated within its borders.

These successes were impressive, but at the same time largely superficial from a real health point of view. There were the handicaps of an archaic state fiscal system and a resultant empty treasury, so that the annual appropriation was only $2,500, while that for county work was in general equally small, and in most of them nothing at all.

The reason that any real progress was made under such adverse conditions was due to a number of different factors. The secretary of the board lent his home to the board for its office, and the members of his family furnished clerical and stenographic assistance for 28 years, during which time he practised medicine every day for his own and their support. There were 500 physicians of reputation in the 120 counties who did the local work without compensation. Further than this there was the realization of the importance of the education of the people. As well as was possible under the circumstances, the teachers, the news-

papers, the clergy and the legal profession, and of more importance than any of these, the women's clubs, were enlisted in a campaign, largely informal, to impress on every Kentucky home the knowledge of the large ratio of really preventable deaths.

Imperfect as its leaders knew this pioneer work to be, the unselfish, tireless and more or less successful efforts of the medical profession, of which the State and County Boards of Health considered themselves the executive committees, in protecting the health and lives of the people in times of epidemic stress, as well as in every day practice, at last created a favorable public sentiment. As the result of this, in 1910, long before the condition of the state treasury was at all relieved, the law was so extended as to provide for a Bureau of Sanitation, a Bureau of Bacteriology, a Bureau of Vital Statistics, after the plan of the model law, and an Annual School for County and City Health Officers, with the attendance compulsory and all expenses paid by the jurisdiction represented by each of them. For all of this there was an annual appropriation of $85,000, including that from counties for Vital Statistics.

This enactment marked a new era in Kentucky. At the end of the first year the state was admitted into the registration area for deaths, as has since been done for births. A little later the U. S. Public Health Service, in coöperation with the board, as was true of all the other activities to be mentioned, began a survey of the Ohio River and its tributaries, covering the sources of public water supply for the entire state, at an estimated annual expense of $30,000. This service also during that year established three hospitals for the treatment and eradication of trachoma, moving them from year to year, as districts were freed from the disease. All of them are still in active operation, and are monthly curing hundreds of these infectious cases at an annual expense of about $30,000. About the same time the International Health Commission inaugurated a campaign to demonstrate the possibility and duty of eradicating hookworm disease, which was most successfully done at an annual expense of $20,000.

In each of the eight years since it was created, the Bureau of Bacteriology has made free examinations of an average of 32,750 specimens as aids to diagnosis, distributed an annual average of 23,887,000 units of diphtheria antitoxin at its actual cost based on competitive bids, and proportionate amounts for use against typhoid fever, smallpox, tetanus and other sera and vaccines free, or at small cost. Through the generosity of the Mayo Foundation and Doctor Rosenow, it distributed for free use vaccine for about 500,000 persons during the recent influenza epidemic, with such satisfactory results that the board is now establishing its own laboratories for the manufacture of this and all the others of the vaccines and sera mentioned, for continuous free distribution. This bureau has also administered the free Pasteur prophylactic treatment against rabies to 869 persons, all with a saving to the people each year, by this activity alone, of fully twice the annual appropriation to the board for all purposes. It is calculated that the money expended by the other bureaus, to say nothing of the protection to health and life for the work done under its auspices by the national agencies referred to, has been a good investment.

When influenza was brought into the state in September of last year, by troops from infected camps in other sections of the country, warned by the disastrous experience in other jurisdictions previously affected, every theatre, picture

show, school, court, church and other place of public assembly was closed and the order rigidly enforced. Individuals and families were isolated as nearly as could be done and, in response to cries of distress from every quarter, with the most cordial daily coöperation of the U. S. Public Health Service, Red Cross and State Council of Defense, 36 civilian physicians and a larger number of nurses were sent to aid the official Medical and Nurse Corps of Camp Taylor, and 196 physicians, 216 nurses, and food and other supplies in great quantities, were sent to stricken rural communities in different parts of the state.

On account of the progress so briefly and imperfectly described here and the growing sentiment for better things, it was not difficult to secure the passage of a bill at the last session of the General Assembly, transferring to the State Board of Health, the State Tuberculosis Commission, the State Pure Food and Drug Commission, the State Hotel Inspection Service and every other agency of the commonwealth performing health functions, with all of the powers, duties and appropriations pertaining to or imposed upon them. The total annual appropriation for these services including that already provided for the work of vital statistics was $140,000.

After the transfers were made, so that it might better perform its original and these added duties, the board ordered that existing bureaus be continued and created new ones as follows: A Bureau of Vital Statistics, a Bureau of Tuberculosis, a Bureau of Epidemiology and Bacteriology, a Bureau of Pure Food and Drugs, a Bureau of Venereal Diseases, a Bureau for the Conservation of Vision, a Bureau of Hotels and Restaurants, and a Bureau of Sanitation having within it the following: A Division of Sanitary Engineering, a Division of Housing and Industrial Hygiene, a Division of Child Welfare, and a Division of County and Visiting Nurses.

The State Board of Health had been located at Bowling Green for 36 years, but upon the enactment of this consolidated health law, negotiations were opened between it and the University of Louisville, looking to the removal of the boards, offices and activities to that city. Further than this the organization is proposed, under the joint auspices of the university and board, of a School for Health Officers, Visiting Nurses and Welfare Workers. The full course will lead up to a degree for the respective vocations. The secretary of the board will be dean of the school, and the heads of the bureaus and such others as may be selected will compose the faculty.

The law also makes provision for County Departments of Health, with full time health officers, public health nurses and other assistants, and for emergency laboratories and other necessary equipment for real health work, in every county or groups of counties, to be established and maintained by the local fiscal authorities, or by vote of the people. With the non-partisan, non-sectarian central organization to coördinate the entire program, and a school to give a course of practical training for those who are to do the real work in every county and community, and the leaders of public opinion everywhere ready to coöperate in it, it would seem that the possibilities for the future in this field are only limited by the intelligence and public spirit of the people and fiscal officials of each jurisdiction.

ALABAMA'S ACCOMPLISHMENT IN ONE HALF-YEAR OF PUBLIC HEALTH ADMINISTRATION.

S. W. Welch, M. D.,
State Health Officer.

THE plan of public health administration adopted by the Alabama State Board of Health includes the organization of health units in every county; these units to consist of a full-time health officer who will act as an executive and direct the work of sanitary inspectors, public health nurses and a laboratory assistant. The foremost problem to be attacked by the county health unit is the problem of rural sanitation. An activity which should go hand in hand with sanitation is that of public health nursing, used primarily as a means of public health education. For every six counties operating under this plan it is proposed to install a field representative of the State Board of Health as advisor and consultant. Special bureaus will also aid in the development of the various types of work.

During the first six months of 1919, five county health units were established, bringing the number in the state up to fourteen.

A basis of coöperation has been established with the International Health Board by which its funds become available under certain conditions for the building of units in counties operating under this plan.

The United States Public Health Service has entered into an agreement with the State Board of Health to undertake work in certain counties on a coöperative basis, the connection being established through the State Health Office.

The Children's Bureau of the Department of Labor has made several studies in Alabama relative to the conditions affecting infant and maternal mortality, the health status of children in the pre-school age period and the health status of children in industry.

A bureau for control of venereal diseases was established in the latter part of 1918, the United States Public Health Service coöperating with the State Board of Health. During the six months under discussion, fourteen clinics for the treatment of venereal diseases have been successfully established by this bureau. A "movable" clinic is the feature of this work. It consists of a clinician and a nurse who, in rural counties, go from village to village and instruct for a given period a local doctor in administering the treatments. It is hoped to get a sufficient number of men in the rural districts to do the work, the State furnishing the equipment and the treatments. In July of this year 7,200 treatments were given in these clinics, and 1,300 doses of arsphenamine, at a cost of $3,800. The value of this month's work, estimated according to regular medical fees, is $35,000.

Short studies in infant and maternal mortality were made by the Children's Bureau in three cities. These studies were accompanied by health conferences which afforded free medical examination of children in the pre-school age period. Studies of the health status of children in the adolescent period were made by the Children's Bureau in all of the industrial centers of the state. These activities were of inestimable educational value in the communities in which they were carried on and will eventually exert a statewide influence.

A Bureau of Public Health Nursing has been established as a part of the machin-

ery of the State Board of Health. A public health nurse, Miss Jessie L. Marriner, formerly engaged in making infant and maternal mortality studies in Alabama for the Federal Children's Bureau, assumed the direction of this new department. Its object is to develop public health nursing activities throughout the state, covering every phase of the work. During the four months of its existence this bureau has made a survey of the public health nursing resources of the State, showing that twenty-nine nurses are employed in industrial plants, six by boards of health, seven by the state board for venereal disease clinic work, four independent employees of a Life Insurance Company, five by the State Anti-tuberculosis Association, three by Visiting Nurse Associations, three by Red Cross chapters and two by boards of education, making a total of fifty-nine public health nurses employed in the state, which has a population of more than two and one-quarter million people, an average of one per 40,000. In certain Eastern States the growth of this service has reached a point where one nurse is employed in community work for every 9,000 of the population, and additions are constantly being made to the force. The need for encouraging the development of this phase of work in Alabama is sufficiently obvious.

The American Red Cross, in its peacetime program for assisting in the development of this field, has joined forces with us by appointing as their state director of nursing activities, the head of our Bureau of Public Health Nursing. A process of building up existing agencies in this field has been successfully begun in Mobile where the Red Cross Chapter has contributed to the Public Health Nursing Association the salary and expenses of an additional nurse; and in Colbert and Walker Counties where nurses have been appointed under the chapters.

Legislation has been introduced providing for the adequate control of venereal diseases and for the enactment of laws regulating the gathering of vital and mortality statistics based upon the requirements of the Model Law of the Bureau of the United States Census.

The legislature, now in session, has been asked to make an appropriation of $150,000 for state health purposes. The proposition has the endorsement of the Governor and the Budget Committee and has little opposition in either House.

WHAT LOUISIANA IS DOING.

Miss Agnes Morris,
New Orleans, La.

RECORDS of the Louisiana State Board of Health for the past decade show a well-defined program each year in some specific line of work.

Dr. Oscar Dowling, when appointed president of the board in August, 1910, sensed the fundamental and essential need for adequate vital statistics; therefore, he began immediately a campaign to obtain these reports. In response, sixteen parishes offered to pay local registrars. The postmaster-general upon request gave permission to postmasters to act as local registrars. Later, the state enacted a law making it mandatory that each parish pay twenty-five cents for each certificate of birth and death accepted by the State Board of Health.

These measures together with the edu-

cational campaign carried on by personal letters and through the press resulted in the admission of Louisiana, November, 1919, into the registration area for deaths. The provisions of the model law have been in effect practically since 1910, but in 1918, with a few adaptations to meet local conditions, it was made a state law.

At present special effort is being made to make complete the records of births, and it is hoped the state may be recognized this year by the Census Bureau as having the required percentage of births recorded. Louisiana's death rate compares favorably with that of other states and her birth rate is relatively high; therefore, admission to the Registration Area is a commercial asset of importance and invaluable as a basis for effective health activities.

One entire year was devoted to obtaining help from the doctors in the reporting of communicable diseases. The bureau at Washington gave material assistance by appointing Dr. Dowling collaborating epidemiologist and in furnishing supplies of stationery and cards.

The bureau now handles thousands of reports each year, and though these records are still incomplete the progress being made is shown by the figures. The total number reported in 1914 was 6,141, and in 1918, including more than 200,000.

In connection with this bureau, antityphoid vaccine is furnished free, about 40,000 doses having been distributed within the past year.

For twelve months control of venereal disease has been emphasized. The reports for August, 1919, show 1,318 cases reported—pertinent proof that the doctors are beginning to realize the value of the assistance offered by the State Board of Health. Measures of control were made possible by enactments of the legislature in May, 1919. Since then five clinics have been put into operation, and through the help of the Chamberlain-Kahn fund salvarsan and nursing service are provided free, the medicine costing about $1,000 a month.

A Bureau of Sanitary Engineering was established in 1913. Control of water supplies, sewerage and sewage disposal systems was put into effect. Through this bureau local officials are given aid in operation problems, and public and railroad supplies water supplies are supervised. Plans for new systems and treatment plants are reviewed. Supervision of campaigns for hookworm eradication, through installation of sanitary privies in rural districts is given when certain requirements are fulfilled. Inspections of schools, court houses, jails, public markets and hospitals are made, mainly from an engineering standpoint—water, sewerage, ventilation, lighting and maintenance.

Plans are reviewed to assist local officials in getting practical designs for new buildings and for remodeling old structures.

Two outbreaks of typhoid fever have been investigated and stream pollution and odor nuisances in different sections.

Shortly after his appointment Dr. Dowling put on the road the educational-hygiene-exhibit train. The entire state was covered, and a "movie" show was given in every village, town and city. The cars and the inspectors awakened the citizens to insanitary conditions; publicity moved officials and individuals to action.

As a basis for these activities the Sanitary Code was rewritten and extended. Regulations prohibiting the common drinking cup, common towel and common hair brush were passed, and constructive rules laid down regulating sanitary requirements of schools, railway stations, jails, and all places where foodstuffs were handled and provisions made for sanitary

disposal of sewage and wastes of all kinds.

The activities of the Bureau of Food and Drugs have increased out of all proportion to the working force. About 2,000 dairies are inspected and scored and rescored during each biennium. The samples analyzed are about 1,500 a year, while the hearings and prosecutions number a thousand or more. Close to 600,000 pounds of decomposed foods are condemned each year.

Since the enforcement of the anti-narcotic acts, both federal and state measures has been so drastic the bureau has been overwhelmed with the related activities.

Consistent efforts have been made to prove to the quack, the faker, the itinerant vendor of patent so-called remedies, that this kind of fraud is not to be tolerated. A law against fraudulent advertising was enacted in 1914, and soon after the board was asked to censor medical advertisements for one of the dailies and has made every effort to bring under the ban of public opinion the charlatan and the patent remedy.

Attempts have been made to focus attention on mosquito extermination. To this end sanitary surveys were made of thirty-one cities and towns, and the rights of way of several railroads. Specific recommendations were sent to the authorities responsible for conditions.

In child hygiene, the effort has been largely to do educational work. A monthly bulletin is used as the organ of this bureau. Copies of this are distributed by the principals of the schools—about 250,000 a month. Visiting nurses were employed for two years, one colored, one white. In all, about 4,000 babies were visited with follow-up visits of 2,500. About 500 midwives were interviewed by these nurses and many babies sent to clinics for treatment. In four parishes a doctor and a nurse examined the school children of the city and rural schools. This work was done as a demonstration of the need for medical examination and attention. A record of the examination of each child is sent to the parent. In one city follow-up work was done. The records show about 33⅓ per cent of the children had received medical attention.

For the past five years there has been a constant propaganda carried on among the negroes. A colored lecturer with a moving picture outfit transported on a Ford truck is constantly on the road. This lecturer goes into the rural districts, distributes literature, gives moving picture entertainments averaging about five nights a week.

A comprehensive program made out in detail as to the health needs of the people of the state was presented to the Legislature of 1918 with a request for a per capita appropriation of at least 12½ cents. Only $50,000 was allowed, and with this amount the State Board of Health has been unable to put into effect many of the activities planned.

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What these States have been doing will be discussed quite fully at the Annual Meeting. There is still time to make up your mind to go.
New Orleans, October 27-30, 1919.

PLANS AND PERSONNEL OF THE RECENTLY CREATED NEW MEXICO STATE BOARD.

C. E. WALLER,
Passed Assistant Surgeon, United States Public Health Service, Acting Commissioner of Health of New Mexico.

THE present New Mexico State Department of Health was organized as a result of a statute passed by the 1919 legislature. The department is composed of a board of health, consisting of three members, one only of whom need be a physician; a commissioner; and the administrative staff.

The Board of Health is appointed by the governor. Its members serve for a term of six years, without salary. The board has power to pass such regulations concerning the public health as are necessary for the enforcement of the statutes, and such regulations have the effect of law. Rather broad general powers are conferred.

The commissioner of Health is required to have had experience and special training in public health administration. He is the executive officer of the department, and exercises its powers and duties.

At the present time, by arrangement with the United States Public Health Service, P. A. Surgeon C. E. Waller is acting as commissioner, beginning July 15, 1919. The present staff consists of G. S. Luckett, M. D., as director of the Division of Preventable Diseases, and Harold F. Gray, M. S., Gr. P. H., as director of the Division of Sanitary Engineering and General Sanitation. A laboratory will be established at an early date.

The first work of the department to be undertaken is the administrative organization, so as to secure a reasonable supervision over the local health jurisdictions, and provide adequate records. Reporting of vital statistics and morbidity are receiving immediate attention. Special campaigns against smallpox and typhoid fever, which are prevalent, will be carried on. A general survey of water supplies and sewerage is now being made. Special efforts toward public health education are in progress.

Very little is known as to the real public health problems of New Mexico, since mortality and morbidity data are practically non-existent, and the physical and anthropological characteristics of the country and the people are decidedly different from those of other states. For this reason it is anticipated that the solutions of various public health problems which have been found applicable in other states will not apply exactly to New Mexico, and new and original methods will have to be devised and tried out.

The Board of Health appointed by the governor recently includes Mrs. A. Otero-Warren of Santa Fé, chairman; John Tombs, Albuquerque, secretary, and Oliver T. Hyde, M. D., of Albuquerque.

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For reports from other Southern States of the work accomplished and in prospect, see the November Issue of the Journal.

EDITORIAL SECTION

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A BAD GENERAL.

A good general may not be able to win a war. A bad general will surely lose it. In the fight against disease there is no worse leader than old General Principles. General Principles is another name for ignorance and laziness. At the best General Principles means *a priori* reasoning and the most that we can expect of *a priori* reasoning, when applied to the infinitely complex phenomena of life, is to suggest theories which must be tried in the laboratory, or in the field.

General Principles said germs breed in filth, so twenty years ago the Federal Government sent Colonel Waring to clean Havana in order that the germs of yellow fever might not grow. It was fine to have a spic and span city, but there was more yellow fever the next year than ever before. According to General Principles contagion, which is invisible, must be poured out in the invisible breath and spread through the air. To stop it the General gave directions to nail a sheet over the door. This the mother did when her child had diphtheria. Then, with saliva covered hands she fed the other children and they died. Nothing was said about contact infection, for how could General Principles know about that?

General Principles said that cold causes coughs; therefore cold is the worst thing for consumption, the worst of all coughs. Hence the windows were closed day and night and the consumptive died. Now the consumptive is cured by living in the open air all the year round.

According to General Principles, if there is any taint about meat it is unwholesome, for it contains "ptomaines" and should be destroyed, so the inspector seizes tons of food which many people, not too finicky, would be glad to eat, if allowed. We have learned that the General is wrong and that meat with a taint is no more likely to cause disease than meat which seems perfectly sweet.

According to General Principles the way to stop contagious disease is to isolate the sick, for disease spreads from the sick to the well. So cases of bubonic plague were isolated, but all to no purpose, for rats spread the disease. Yellow fever was isolated, but mosquitoes evaded the quarantine. According to General Principles every thing that comes from the body of the sick carries infection, hence the dangers of desquama-

tion. Hundreds of thousands of children have been uselessly isolated for two weeks for measles, when one week would have done just as well, for measles ceases to be infectious before desquamation begins.

Last autumn the world suffered from the worst epidemic in history. No one knew what to do, so, notwithstanding the defeats to his credit, old General Principles was called on to take command. Of course he wished to isolate, for influenza is a contagious disease. However, isolation of one quarter to one half of the population was, on the face of it, impracticable, so we were told to "restrict intercourse" by shutting schools, theatres and churches and by "staggered closing" of stores. It has not been shown that this did any good. Few even claim that it did. The disease ran its course and so it will, until more is known about it. One may fool the people, but one cannot fool disease.

It is time to mutiny. Health officials should depose General Principles. Let him no longer speak with authority. Let him perform his one useful function of suggesting theories for others to verify. War against disease cannot be won unless guided by specific knowledge. If the campaign is undertaken without this, there will be loss of time and money and maybe of lives. If this knowledge is not at hand it is best to delay the drive.

CHARLES V. CHAPIN, M. D.

THRIFT VS. RETRENCHMENT IN PUBLIC HEALTH WORK.

The times demand rigid economy. Retrenchment is being demanded in many fields of activity. This generally means a cutting down of appropriations, of expenses, of work. But how can appropriations for health departments be lessened in the face of just demands for salary increases to meet the rising costs of living? How can health work be given up when it has proved so valuable in increasing the health and comfort of the people, when it means so much to the vital capital of the country, when, in particular, it means so much to the laboring man, whose health is his only capital? This is a difficult problem for all health officials today. What is to be the answer?

It is natural for health officers to say, "Let the retrenchment be in some other department" than that of health for the reasons just stated. In spite of its force this argument should not prevail. Health departments as well as other state and municipal departments must share in a desperate attempt to keep taxes from rising to the point of confiscation. For many years propaganda has been active in attempting to increase appropriations. "Public health is purchasable," said the State of New York, "So much per capita for health administration" has been demanded—forty, fifty, sixty cents, a dollar a year. Health officials have been commended for succeeding in getting money appropriated for their work. In many places, the amounts spent for health administration are still too low and should be raised; but here and there there may be found budgets which in the present stress are higher than prudence justifies. Certainly the present time demands that greater attention be given to the spending side of the ledger. Thrift must take the place of liberality. The work of a dollar must be watched as it was never watched before. Let there be retrenchment if necessary, but let it be accompanied by thrift and efficiency in order that the public health movement may not be set back. Now is the season of budget-making and the time to examine critically last year's expenditures and the results which they have brought.

It is exceedingly difficult to apply the policy of retrenchment to actual cases. A few guiding principles must be kept in mind. The first is that duplication of effort must be avoided. Does Federal work anywhere overlap state work? Does state work overlap local work? Does municipal work overlap the efforts of private organizations? If there is undesirable duplication anywhere—and there often is—now is the time for people to get together and cut out the unnecessary work. The second principle is that one must find what efforts are yielding the least returns for the money spent. This means a careful scrutiny of relative values and demands the highest judg-

ment based on facts and statistics. A third principle is the separation of the ephemeral from the permanent. Accountants emphasize the important difference between capital expenditures and expenditures which should be charged against current accounts. Certain expenditures are devoted to work of permanent value,—other expenditures produce results which are useful for the moment, but are lacking in lasting quality.

A few suggestive questions may be asked. Is the department top heavy? Are the head men doing as hard work as the subordinates? The housekeeper nowadays is often compelled to do her own work without the aid of a domestic servant. Are officials too dependent upon their clerks and stenographers? Are printing bills too large? Is publicity being overworked? Does poetry really kill flies, and are cartoons necessary to attract attention to life saving principles? Can statistical tables be condensed and useless diagrams omitted? Are too many samples of water analyzed as routine procedures? Is too much attention given to disinfection? A hundred questions may be raised and in these times ought to be raised.

But it must also be remembered that there is a world-wide demand for increased production. Health is a material factor in production, and health administration pared down to a point where human vitality is threatened is no saving at all, but rather a public loss. Health departments must produce health.

Obviously, there are two sides to the policy of retrenchment and they ought to be discussed freely by health officers. There is but one side, however, to the policy of thrift. Work and thrift built up this country in its early days, and work and thrift must save it now.

The present times are likely to prove a challenge to the loyalty of public health officers to their chosen profession. It is true that salary lists respond more slowly to economic changes than mercantile profits or professional fees. But in these days when so many are making sacrifices and drawing on their bank accounts, shall medical men, acting as health officers, go back to professional practice and leave their posts to be filled with incompetents, or shall they show their loyalty by keeping hard at work on the same old salary or a slightly larger one; and if they hold on, how shall their faithfulness be rewarded? There are matters of ethics which many departments will be called upon to consider.

GEORGE C. WHIPPLE.

HOW ABOUT JOINING A SECTION.

Members of the American Public Health Association are reminded that elections to membership in the sections take place at the annual meeting. In order that members may have the greatest advantages through belonging to the A. P. H. A. the seven existing sections have been formed, and others will be established whenever a sufficient number of members express interest in its formation. The existing sections are: Sanitary Engineering, Food and Drugs, Vital Statistics, Sociological, Public Health Administration, Laboratory and Industrial Hygiene.

In order to join one of these sections, which may be done without additional fee, it is necessary for the name to be in the hands of the Secretary of the section by or before the time of the annual meeting. At the business meeting of the section membership to the section may be effected. At no other time in the year, according to the Constitution, may members join a section. If you wish to belong to any of the sections, it is necessary to attend to the matter in time. There is no time like now, so send in your name at once.

THE PRELIMINARY PROGRAMS.

The Preliminary Programs of the New Orleans meetings have been published as a special supplement to this issue of the JOURNAL, and each member will have opportunity to inform himself from this revised edition, of the feast of good things that is to be presented during the sessions at the southern capital.

ASSOCIATION NEWS

HEALTH EMPLOYMENT BUREAU.

In order to help relieve the shortage of sanitarians, free help-wanted announcements will be carried in this column until further notice. Copy goes to the printer on the fifteenth of each month. In answering keyed advertisements, please mail replies separately.

The Health Employment Bureau also sends lists of applicants to prospective employers without charge.

Three county directors for full-time rural health work. Young physicians preferred; $2,400 and expenses. Address C. W. P. 276, care of the JOURNAL.

Graduate chemist who has had experience in chemical analysis of foods, drugs, dairy products, water, poisons, etc. Preferably a resident of Cincinnati. Address P. H. W. 290, care of the JOURNAL.

Nurse with public health experience. Address C. M. I. 294, care of the JOURNAL.

Woman physician to assist Director of Child Hygiene, Kansas State Board of Health. Work will include Pullman health exhibit, health conferences, correspondence, etc. Salary $1,500 with vacation on pay and traveling expenses.

Wanted by the U. S. Interdepartmental Social Hygiene Board, men or women for Chiefs of Division for scientific research, $3,500 to $4,500; educational research, $3,500 to $4,500; relations with states, $3,500 to $4,500; records, information and planning, $3,500 to $4,500; also educational division assistant, $2,800 to $3,600; supervising assistant and inspector $2,800 to $3,600; field agent $1,800 to $3,600. Receipt of applications to close November 4. Apply to U. S. Civil Service Commission, Washington, D. C., or Secretary U. S. Civil Service Board, post-office or custom house in any large city.

RAILROAD RATES TO NEW ORLEANS.

Here are the tourist fares from different points in the North to New Orleans as quoted by the U. S. Railroad Administration to the Secretary. These tickets will be on sale daily at local ticket offices from October 1, 1919, till April 30, 1920, and bear final return limit of May 31, 1920. They permit of stop-overs at any point *en route* in either direction within the final limit. Add the war tax of 8 per cent to these rates.

Boston, Mass.	$83.94
Albany, N. Y.	71.00
Baltimore, Md.	63.09
Montreal, P. Q.	84.55
New York, N. Y.	73.14
Philadelphia, Pa.	68.28
Chicago, Ill.	51.03
Springfield, Ill.	43.71
Indianapolis, Ind.	46.71
Detroit, Mich.	61.33
St. Louis, Mo.	38.02
Buffalo, N. Y.	70.42
Cincinnati, O.	45.42

For the special rates from your own city, if not listed here, enquire of your local ticket agent.

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LIST OF NEW MEMBERS

PROPOSED FOR ELECTION TO THE

A. P. H. A.

FROM AUGUST 21 TO SEPTEMBER 22, 1919.

Sponsors	—and— (States arranged in alphabetical order)	The New Members Whom They Introduced
T. E. REEKS, M. D., Hartford, Conn.		E. H. MARSH, M. D., Health Officer, Mansfield Centre, Conn.
		CHARLES A. RYDER, M. D., Health Officer, Brookfield Center, Conn.
		IRWIN GRANNIS, M. D., Saybrook, Conn.
		FRANK L. SMITH, M. D., Health Officer, Stafford Springs, Conn.
		F. B. CONVERSE, M. D., Health Officer, West Willington, Conn.
ROBERT R. HARKNESS, M. D., Houghton, Mich.		PROF. ROYCE R. LONG, A. B., Physical Director, Greeley, Colo.

GEORGE M. KOBER, M. D., Washington, D. C.

B. L. ARMS, M. D., Jacksonville, Fla.

M. F. HAYGOOD, Atlanta, Ga.
ROSS L. LAYBURN, Bacteriologist, Iowa City, Iowa.
DR. BERNARD FANTUS, Chicago, Ill.

IRWIN D. GROAK, M. E., Chicago, Ill.
JOHN A. KAPPELMAN, M. D., Springfield, Ill.

D. GREENBERG, Yale School of Medicine, New Haven, Conn.
JAMES A. TOBEY, Orange, N. J.

W. H. ROBIN, M. D., New Orleans, La.

C. HAMPTON JONES, Baltimore, Md.

MERRILL E. CHAMPION, Boston, Mass.

ARTHUR W. HEDRICH, Boston, Mass.

WILLARD E. WARD, Brookline, Mass.
J. F. WINCHESTER, M. D., Lawrence, Mass.

EUGENE C. HOWE, Wellesley, Mass.

WARREN E. FORSYTHE, Ann Arbor, Mich.
WILLIAM F. COGGSWELL, M. D., and JOHN J. SIPPY, Helena, Mont.

HERBERT W. CUMMINGS, Trenton, N. J.

PROF. B. R. RICKARDS, Albany, N. Y.

F. D. BEAGLE, M. D., Albany, N. Y.
ROBERT TILDEN, Catskill, N. Y.
ROBERT S. BREED, Geneva, N. Y.
LEE K. FRANKEL, M. D., New York City, N. Y.

WINIFRED S. GIBBS, New York City, N. Y.
S. R. KLEIN, M. D., New York City, N. Y.

M. M. ROHN, M. D., New York City, N. Y.

N. Y. STATE DEPT. OF HEALTH.

I. M. CASHELL, M. D., Goldsboro, N. C.

MILTON F. STEIN and G. E. HARMON, Cleveland, Ohio.
E. E. ECKER, M. D., Cleveland, Ohio.
EMERY R. HAYHURST, M. D., Columbus, Ohio.

RUTH McNARY SMITH, Marshfield, Ore.

J. W. WRIGHT, M. D., Erie, Pa.
H. S. MUSTARD, M. D., Orange, Va.

LEO H. BARTEMEIER, Medical Student, Washington, D. C.
DAVID G. GARDINER, Medical Student, Washington, D. C.
WILLIAM M. KETCHUM, Medical Student, Washington, D. C.
EDMOND D. WELCH, Medical Student, Washington, D. C.
MATHIAS DONNELLY, Medical Student, Gloversville, N. Y.
HARRY F. DAVIS, Medical Student, Youngstown, Ohio.

RALPH N. GREENE, State Board of Health, Jacksonville, Fla.
JOHN W. HART, Scientific Assistant, Washington, D. C.
W. L. WOOD, M. D., Health Officer, Lifton, Ga.
H. S. HUTTON, Scientific Assistant, Perryville, Md.
HEBER J. SEARS, M. D., Dept. of Hygiene and Preventive Medicine, Salt Lake City, Utah.
EVERETT JUDSON, Sanitary Engineer, Chicago, Ill.
ROSS W. GRISWOLD, M. D., Litchfield, Ill.
DEPT. OF PUBLIC HEALTH AND SAFETY, H. M. Gardner, Commissioner, Olney, Ill.
MISS MYRA BULL, R. N., Public Health Nurse, Terryville, Conn.
HERBERT WILEY CUMMINGS, State Representative V. D. Control, Trenton, N. J.
MARION S. LOMBARD, M. D., Past Assistant Surgeon, U. S. P. H. S., New Orleans, La.
HECTOR E. BERNADAS, M. D., New Orleans, La.
P. PAULINE WISOTZKI, Social Service Nurse, Baltimore, Md.
MRS. ELIZABETH S. CAMPBELL, R. N., Public Health Nurse, Boston, Mass.
J. A. TEEGARDEN, M. D., Sec'y Board of Health, E. Chicago, Ill.
J. LAWRENCE McCORMICK, Atty., Boston, Mass.
D. M. CAMPBELL, D. V. S., Editor Veterinary Journal, Chicago, Ill.
HELEN M. McKINSTRY, Physical Educator, New York City, N. Y.
H. C. FORTNER, Catawissa, Pa.
E. D. BAKER, M. D., Health Officer, Twin Bridges, Mont.
THOMAS B. PLEASANTS, M. D., Lewistown, Mont.
DR. LEOPOLD M. ROHR, State Dept. of Health, Trenton, N. J.
GILBERT M. TUCKER, Jr., Supervisor of Exhibits, Glenmont, N. Y.
FREDERICK C. PETERSON, M. D., Albany, N. Y.
CHARLES E. WILLARD, M. D., Catskill, N. Y.
MILDRED A. DAVIS, Bacteriologist, Geneva, N. Y.
JAY BERGEN OGDEN, M. D., Asst. Medical Director, New York City, N. Y.
LAURA H. WOODRUFF, R. N., Sussex, N. J.
MISS ELIZABETH C. WALSH, Jamaica, L. I., N. Y.
MISS ROSEMARY DOLAN, A. B., Teacher and Law Student, New York City, N. Y.
MRS. EDITH J. MITCHELL, Social Worker, New York City, N. Y.
WILLIAM A. BING, M. D., Public Health Activities, Canandaigua, N. Y.
WILLIAM A. HOLLA, M. D., Health Officer, Shrub Oak, N. Y.
LIONEL WEIL, Goldsboro, N. C.
PURO SANITARY DRINKING FOUNTAIN CO., Haydenville, Mass.
GEORGE B. GASCOIGNE, Sanitary Engineer, Cleveland, Ohio.
LESTER L. STRONG, Bacteriologist, Cleveland, Ohio.
J. S. McCUNE, Director of Laboratories, Columbus, Ohio.
GENEVIEVE FISHER, Ames, Iowa.
ESTHER REBOC, Pomona, Cal.
(Miss Reboc's name was spelled Rebok in August Journal.)
COMMISSIONERS OF WATER WORKS, Erie, Pa.
H. W. BOSEE, Sanitary Demonstrator, Philadelphia, Pa.

MAYO TOLMAN, Charleston, W. Va.

EMMETT BRANDT, Pullman, Wash.

T. J. MURRAY, Pullman, Wash.

HOWARD L. HULL, M. D., Harrisburg, Pa.

E. C. BLACKBURN, M. D., Memphis, Tenn.

JOHN EDWARD MARSCHNER, M. D., Wheeling, W. Va.

CHARLES E. SKINNER, Bacteriology Student, Yakima, Wash.

MARTIN H. KNUTSEN, Bacteriologist, Buffalo, N. Y.

CHARLES P. LARGE, M. D., Meyersdale, Pa.

C. T. GRAVES, M. D., Memphis, Tenn.

Names of Proposed Members Whose Sponsors Are Not Known

W. B. LAWRENCE, M. D., Health Officer, Batesville, Ark.

JOHN THAMES, M. D., Health Officer, Little Rock, Ark.

ALEXANDRE PEDROSO, M. D., S. Paulo, Brazil.

ORVILLE BALDWIN HUNT, PH. C., City Bacteriologist, Berkeley, Cal.

E. C. M. HALL, M. D., Health Officer, New Haven, Conn.

KATHERINE J. KELLY, R. N., Visiting Nurse, Torrington, Conn.

MISS KATHERINE MARDEN, Milledgeville, Ga.

CHARLES M. WHICHER, M. D., Des Moines, Ia.

TRACY H. CLARK, M. D., Otis Bldg., Chicago, Ill.

J. F. DAVIDSON, M. D., Health Officer, Crawfordsville, Ind.

H. R. CARTER, M. D., U. S. P. H. S., Baltimore, Md.

MABEL HEAD, R. N., Public Health Nurse, Cumberland, Md.

MAY K. STEINER, R. N., Public Health Nurse, Cumberland, Md.

HARVEY H. WEISS, Milk and Food Inspector, Cumberland, Md.

FRANCIS H. KINGSBURY, Sanitary Engineer, Medfield, Mass.

HAROLD M. WARREN, Chemist, Bacteriologist, Serologist, Melrose Highlands, Mass.

F. E. CHIDESTER, M. D., Investigator U. S. Bureau of Fisheries, Woods Hole, Mass.

FREDERICK EDMINSTER, M. D., Medical Director, Detroit, Mich.

OAKLAND MOTOR CAR CO., Pontiac, Mich.

ARCHIBALD MANDELL, Bureau of Gov't Research, Detroit, Mich.

PEDRO P. ROMERO, Vera Cruz, Mexico.

J. M. SLIGH, M. D., Anaconda, Mont.

A. W. DEAL, Lewiston, Mont.

DEPT. OF HEALTH, Attention Dr. Jas. F. Edwards, Omaha, Neb.

WILLIAM EDWARD FITZGERALD, Health Officer, New Brunswick, N. J.

MISS LAURA H. WOODRUFF, R. N., Sussex, N. J.

DAVID E. BUCKLEY, Health Officer, West Orange, N. J.

BEATRICE M. BURRELL, Laboratory Asst., State Dept. of Health, Albany, N. Y.

RUFUS B. CRAIN, M. D., Albany, N. Y.

FLORENCE E. DEGRAFF, Nurse, Amsterdam, N. Y.

C. W. O'DONNELL, M. D., Health Officer, Andover, N. Y.

MRS. LOUISE B. WILLIAMS, R. N., Batavia, N. Y.

EDWIN P. WHITFORD, M. D., Health Officer, Bridgewater, N. Y.

BARTON T. McDOWELL, M. D., Bristol Centre, N. Y.

FRANK J. MONAGHAN, M. D., Brooklyn, N. Y.

ANNA M. SUTER, R. N., County Public Health Nurse, Canandaigua, N. Y.

FREDERICK G. METZGER, M. D., Health Officer, Carthage, N. Y.

EDWARD A. HOLMES, M. D., Health Officer, Downsville, N. Y.

DAVID EDWARDS, M. D., East Hampton, N. Y.

CHARLES KELLEY, M. D., Health Officer, Franklinville, N. Y.

WILLIAM L. MUNSON, M. D., Sanitary Supervisor, Granville, N. Y.

GEORGE C. MENNINGER, M. D., Health Officer, Harrison, N. Y.

WILLIAM D. COLLINS, M. D., Health Officer, Hudson, N. Y.

LUTHER M. JAYNE, M. D., Health Officer, LaSalle, N. Y.

LUTHER C. PAYNE, M. D., Health Officer, Liberty, N. Y.

CAROLINE M. FUCHS, Nurse, Nassau County Assn., Mineola, N. Y.

ELWIN CHAMPLIN, M. D., Health Officer, New York City, N. Y.

JAY BERGEN OGDEN, Asst. Medical Director, Metropolitan Life Ins. Co., New York City, N. Y.

MARY LAIRD, R. N., Director, Public Health Nursing Association, Rochester, N. Y.

PEARL EDITH PARKER, R. N., Health Officer, Rhinebeck, N. Y.

ELIZABETH A. BROUNSON, R. N., School Nurse, Saratoga Springs, N. Y.

HELEN SARGENT, R. N., Glen Ridge Sanatorium, Schenectady, N. Y.

JOHN F. McAMMOND, M. D., Surgeon, Scottsville, N. Y.

MISS E. M. JENNINGS, Nurse, Tuckahoe, N. Y.

KATHERINE L. MEZERA, R. N., Industrial Nurse, Victory Mills, N. Y.

LEMAR M. ANDREWS, M. D., Health Officer, Warsaw, N. Y.

G. S. CARPENTER, M. D., Health Officer, Waverly, N. Y.

WILLIAM LOUIS HAVENS, Sanitary Engineer, Cleveland, Ohio.

MARVIN D. SHIE, Cleveland, Ohio.

LESTER L. STRONG, Bacteriologist, Cleveland, Ohio.

DAVID STUART WHITE, D. V. M., Columbus, Ohio.

BRUCE SNODGRASS, M. D., County Medical Director, Beaver Falls, Pa.

H. C. FORTNER, Catawissa, Pa.

C. SCHULTZE, M. D., County Medical Director, Danville, Pa.

PAUL SERRE, Laboratory Technician, Dixmont, Pa.

STEWART A. KOSER, Harrisburg, Pa.

HOWARD CLINTON FRONTZE, M. D., Health Officer, Huntingdon, Pa.

J. W. MOSSER, M. D., Health Officer, McConnellsburg, Pa.

CHARLES P. LARGE, M. D., Health Officer, Meyersdale, Pa.

DANIEL EDGAR HOTTENSTEIN, M. D., Millersburg, Pa.

STANLEY M. RINEHART, M. D., Pittsburgh, Pa.

O. R. ALTMAN, M. D., Uniontown, Pa.

JOSEPH SCATTERGOOD, M. D., Health Officer, West Chester, Pa.

CHARLES H. MINER, M. D., County Medical Director, Wilkes-Barre, Pa.

J. S. MILLER, M. D., York, Pa.

HAROLD E. WATSON, Bacteriologist and Chemist, Newport, R. I.

JOSEPHINE S. PRATT, U. S. Pellagra Hospital, Spartanburg, S. C.

T. C. GRAVES, M. D., Health Officer, Memphis, Tenn.

EDGAR CALVIN LEROY MILLER, M. D., Bacteriologist, Richmond, Va.

MARGARET P. KNYCK, M. D., Teacher, Richmond, Va.

L. M. FIELD, M. D., Health Officer, Beloit, Wis.

EDWARD A. BABCOCK, Health Officer and Food Inspector, Madison, Wis.

C. ELMER BARRETT, Health Officer, Salt Lake City, Utah.

BOOKS AND REPORTS REVIEWED

The Blind; Their Condition and the Work Being Done for Them in the United States. *Harry Best, Ph. D., New York: The Macmillan Co., 1919. Pp. 763+xxviii. Price, $4.00.*

One is impressed at the very outset with the thoroughness of the treatment and this feeling increases with further acquaintance with the book. The general discussion ranges itself under half-a-dozen heads: a broad statement of conditions, the possibilities of prevention, the existing provision for the education of children, the intellectual provision for the adult blind, material provision and conclusions.

The purpose of the work is to direct attention to the fact that the blind are a part of the population which should be cared for in the machinery of social organization. Hitherto the attitude has been that of compassion, and the principal provisions have been the instruction of children and indiscriminate alms. The care, so far as the public is concerned, has generally been limited to the former, and after quitting the schools the blind have generally been left to shift for themselves.

Mr. West calls for a treatment that shall be more rational and better in keeping with the advances of the age. His suggestions lie along five general lines, eleemosynary work, educational opportunities for adults as well as children, employment agencies, the proper administration of institutions and prevention. The book is really a study of these factors to a better understanding of the situation.

The student will find items of interest everywhere. The distribution of these unfortunates, for example, presents curious relationships. Why should New Mexico and Nevada have four and five times, respectively, the ratio of blind persons to total population of some other states? Why should the Southern States have a high ratio,—700 to 900 per million of population,—and Wyoming and Washington and Nebraska have only 400? Why should Maine and Vermont have comparatively high ratios, while Massachusetts, New Hampshire and Rhode Island lie in the average group and Connecticut among the low ratios?

Some of the questions are answered by Mr. West, who attributes to a race component like the Mexicans in the border states, or to an endemic disease like trachoma in the South, or to an old age condition with its failing eyesight in New England, the causes of local comparative frequency.

The possibility of employment for the blind is a subject of considerable economic importance and capable of great extension. It is discussed by this author from every point of view, costs entering into the matter in no small degree. The importance of this feature may be judged from the fact that today only about one sixth of the blind are gainfully employed and only about one-fourteenth are able to support themselves.

From the economic consideration of the matter the author passes to prevention. In this, as in so many of the statistical endeavors of our American people, the precise figures are lacking, and in fact only about one half of the real causes of cases of blindness have been reported. It is probable that four fifths of existing blindness is due to disease and more than one-eighth to accident. Cataract is the disease with the largest figure, 11 per cent; next comes atrophy of the optic nerve with 6 per cent, and then are ranged glaucoma, 3 per cent, ophthalmia neonatorum, 2 per cent, and trachoma, 1.5 per cent. Considering the eye difficulties that follow disease, together with preventable industrial accidents and the communicable diseases of ophthalmia neonatorum and trachoma, it would appear as if nearly two thirds of the blindness in the country falls within the class that is of preventable character.

Such facts as these are of great importance. They define the problems and determine to an extent their gravity. Were there no other lesson in Mr. West's volume, this would have paid for its making. It sets a point of departure in preventive work and suggests the lines along which this work may properly move forward. It is the more praiseworthy, therefore, that half a dozen subjects of like importance are considered by him. *R.*

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Alcohol—Its Action on the Human Organism. *English Advisory Committee. Pp. 133+xx. New York: Longmans, Green & Co., 1918. Price, $0.60.*

This book is written not by or for hysterical prohibitionists, but is a review of the existing state of scientific knowledge regarding the action of alcohol on the human organism, prepared by an Advisory Committee appointed by the Central Control Board (Liquor Traffic) of England.

This committee of recognized experts was appointed to consider the conditions affecting the physiological action of alcohol and more particularly the effects on health and industrial efficiency produced by the consumption of beverages of vari-

ous alcoholic strengths, with special reference to the recent orders of the Central Control Board, and further to plan out and direct such investigations as may appear desirable with a view to obtaining more exact data on this and cognate questions.

The review covers very completely and impartially the existing scientific knowledge on the mental effects and food value of alcohol, its action on the muscular, digestive, respiratory and circulatory systems, its poisonous action, and the relation of alcohol to longevity. It might well be consulted by laymen or professional men wishing to discuss intelligently future national action in regulating drink control, and possibly as a guide to the individual in confining the use of alcohol within proper and legitimate limits.

The conclusions represent the unanimous judgment of the committee. *Clarence D. Hart.*

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Pulmonary Tuberculosis. *Maurice Fishberg, M. D., Clinical Professor of Medicine, New York University and Bellevue Medical College. Second edition. Philadelphia: Lea and Febiger, 1919. Pp., 744 Ill. Price, $6.50.*

Tuberculosis from the standpoint of the physician regarding its diagnosis and treatment, and from the standpoint of the public health worker regarding its prevention, is still a problem of great concern. Any attempt at clarifying this problem and point the way to meet it with existing facilities is to be welcomed. Such is the task which Fishberg has undertaken in this volume.

The first fifth of the book is devoted to the etiology, pathology and epidemiology of the disease and these topics are discussed in considerable detail. Chapters on the problem of infection, factors predisposing to the evolution of phthisis, and on phthisiogenesis, treat these questions in a masterly manner. The latter chapter in particular contains a remarkably clear statement of the problem of immunity.

The largest part of the book is devoted to diagnosis. The author cautions the physician in very strong terms, against jumping at hasty diagnoses, in cases not giving reliable signs or symptoms. Such haste is costly to the patient and to the community. It will be recalled that in the early years of the war, thousands upon thousands of men in the French and German armies were rejected because of tuberculosis, many of which, upon a more carefully conducted examination proved to be non-tuberculous, and when returned to the ranks made excellent soldiers.

Many chapters are devoted to a detailed presentation of the symptomatology of the disease from the standpoint of diagnosis, differential diagnosis and prognosis; methods of physical diagnosis, and a discussion of the various clinical forms. The classification of the clinical types as described by the author is interesting and useful because not only has each a different clinical course, but also a different outlook as to recovery, and the treatment differs markedly in each form of the disease. He considers eight groups: (1) chronic phthisis, incipient stage; (2) chronic phthisis, advanced stage; (3) acute phthisis; (4) fibroid phthisis; (5) abortive pulmonary tuberculosis; (6) pulmonary tuberculosis in children; (7) phthisis in the aged; and (8) tuberculosis of the pleura.

The question of treatment is discussed in detail, and the necessity for understanding properly the needs as they arise and how to meet them is clearly indicated. Institutional treatment is not the only effective method of handling the phthisical patient. "The treatment must be individualized to suit the case; it must be elastic and adaptable to the polymorphous nature of the disease and to the various accidents and complications occurring during its course."

The section of prophylaxis contains a very clear statement of the problem of prevention. The necessity for removing the infant from phthisical surroundings is clearly demonstrated by experimental evidence from many sources. Infancy is a period of high mortality from tuberculosis and it is to this period that the forces of prevention must be directed if lives are to be saved. The health officer and tuberculosis worker will find much of value in this section in formulating his campaign of attack against this disease.

This book on the whole is an exhaustive treatise on tuberculosis. Although it has been prepared primarily for the practitioner, yet public health officials and tuberculosis workers will find a wealth of material of practical interest to them. It is to be noted that about one fourth of the book is devoted to a discussion of the problem of tuberculosis from the etiological and preventive aspects of the disease. The material is presented in a lucid manner, each topic is discussed without bias and the experimental evidence given in each case. References to original sources are indicated in the text. The book also contains a well prepared index of authors and subjects. *David Greenberg.*

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The A B C of Exhibit Planning. *Evart G. and Mary Swain Routzahn. New York, Russell Sage Foundation, 1918. Pp. 234+xiv. Illustrated.*

This is an exceedingly well-written book which should be in the library of every organization having to do with public health education. The presentation in the text is eminently clear and very prac-

tical. The fifty or so illustrations with critical footnotes alone will give the reader very helpful fundamentals in the art of effective exhibiting. The authors take up such subjects as having a plan, specific advantages, limitations of exhibits, the audience, presentation of subject matter, utilization of floor space, advertising, follow-up, committee organization and expense. Some one in every health department should read carefully this book.

A. W. Hedrich.

Chemistry for Nurses. *F. N. Peters, A. M., Ph. D., St. Louis: C. V. Mosby Company. 1919. Pp. 302. Price $1.75.*

This publication is written by a man of wide teaching experience in this particular field. Chemistry is a difficult study for nurses, and it is, therefore, very essential to select for a guide one which is written in simple language and is not too theoretical.

The text, as presented in Dr. Peters' book, is rather voluminous as compared to others serving a similar purpose. It contains considerably more material than is ordinarily required in training schools, and it may well be selected as a text-book for schools which lay particular emphasis on the study of chemistry.

Both inorganic and organic chemistry are discussed in 26 chapters. Each chapter concludes with exercises arranged in the form of a series of questions to be answered by the student. The last chapter, which deals with the common poisons, is of particular interest. The text is richly illustrated. On the whole the book is a commendable addition to the literature.

Arthur Lederer, M. D.

CONVENTIONS, CONFERENCES, MEETINGS.

The JOURNAL will be glad to publish the dates of prospective conventions or meetings of associations whose purposes are allied to those of the American Public Health Association.

American Public Health Association, New Orleans, La., October 27–30, 1919.

October —, Louisville, Ky., State Board of Health.

October —, St. Louis, Mo., National Drainage Congress.

October—, Albuquerque, N. M., State Medical Society.

October 7–9, Springfield, Ill., Illinois Public Health Association.

October 9, Ottawa, Ont., Canadian Association for Prevention of Tuberculosis.

October 9–10, Philadelphia, Pa., North Atlantic Tuberculosis Conference.

October 13–14, Dover, Del., Delaware State Medical Society.

October 13–15, St. Louis, Mo., Association of Military Surgeons of the United States.

October 14–15, Omaha, Neb., State Nurses Association.

October 15–17, Chicago, Ill., American Association of Railway Surgeons.

October 16–17, Providence, R. I., New England Tuberculosis Conference.

October 17, New Orleans, La., American Academy of Periodontology.

October 20–24, New Orleans, Dental convention including meetings of National Dental Association, National Association of Dental Faculties, National Association of Dental Examiners, Association of Military Dental Surgeons of United States, Louisiana State Dental Society.

October 20–24, Riverside, Cal., League of California Municipalities and Health Officers.

October 23–24, Jackson, Miss., State Health Officers' meeting.

October 23–29, Washington, D. C., National Women's Trade Union League of America.

October 27–29, Dallas, Tex., State Conference Social Welfare.

October 27–30, New Orleans, American Public Health Association.

October 27–30, New Orleans, La., American Association Medical Milk Commissions.

October 30, Boston, Massachusetts Association of Boards of Health.

November 3–7, New Orleans, National Wholesale Druggists Association.

November 5, St. Paul, Minnesota Public Health Association.

November 11–13, Asheville, N. C., Southern Medical Association.

November 11–13, Asheville, N. C., American Child Hygiene Association.

November 11–13, St. Louis, Mo., National Drainage Council.

November 12–14, New Orleans, La., American Society for Municipal Improvements.

1920, January —, Concord, N. H., Health Officers' meeting.

1920, May —, New Orleans, National Conference of Social Work.

1920, May 12, Washington, D. C., U. S. Pharmaceutical Conventions.

PUBLIC HEALTH NOTES

Abstracts by D. Greenberg, M. P. Horowitz and Mayo Tolman.

Heated Milk Does Not Have Antiscorbutic Vitamine.—Although McCollum and his colleagues have maintained that scurvy is a disease related to intestinal putrefaction and the retention of feces, more recent work in England and America seems to substantiate the former belief that scurvy is due to the lack of a specific vitamine in the diet. Several mild outbreaks of scurvy among infants have recently been reported, when cows' milk which was pasteurized at 63° C. (145.4° F.) was used. Heating does apparently destroy the antiscorbutic vitamine in milk and other foods. It is important, therefore, to use some antiscorbutic when infants are fed exclusively on heated milk or milk products. Fruit juices, such as lemon juice and orange juice, make excellent antiscorbutics. The raw juice of the Swede and the tomato may also be used. The antiscorbutic element in lemon juice is not removed or destroyed, even when the free citric acid and other acids are removed.—*Journal A. M. A.*, July 26, 1919. (*M. P. H.*)

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Sickness and Poverty.—Although many communities recognize the necessity of preventing disease, few appreciate the important relationship between sickness and poverty. Sickness frequently gives rise to poverty especially when the wage earner is affected. Where the illness is prolonged, children are put to work very early, cheaper quarters are taken for the home and the entire social scale is lowered. Poverty also increases the opportunity for sickness to prevail, because it increases the opportunities of contact, due to overcrowding. Poverty usually means the absence of bathing and washing facilities. It means a cold house in the winter and a hot one in the summer. It invariably is associated with excessive fatigue and insufficient recreation, both of which break down the resistance of the human machine. Poverty prevents a family from seeking early medical advice and treatment, and lengthens the period of convalescence. It also prevents proper and frequent dental care and other necessary aids in maintaining a healthy and virile mechanism.—Miss E. Dyke, *Public Health Jour.*, June, 1919. (*M. P. H.*)

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Problem of Motherhood.—It is a well known fact that the toll in health and in life itself of both mother and child during pregnancy and confinement is very great. If the reduction in these unnecessary deaths and illnesses is to be obtained, the problem must be attacked through arousing community interest and education in the vital facts of child conservation. This problem has been attacked in New York City through the Maternity Center Association. The Maternity Center will be the center of an educational campaign for prenatal care of mothers of the district. It will keep records of every case coming under the care of clinics in the neighborhood and will follow up each case so that no woman who registers shall be allowed to slip out from under medical care by reason of illness, carelessness or other cause.

The clinics will be open day and night for emergency calls and will see that a doctor or midwife is supplied for all cases of labor and a nurse for abnormal labors. An endeavor is being made to provide women physicians as far as possible in order, through these clinics, to reach the large class of foreigners who go to the midwife because of prejudice towards the male physician. The Center will follow up each birth and see that nursing care is provided throughout the danger period.—R. W. Lobenstine, *N. Y. Jour. of State Med.*, May, 1919, 177. (*D. G.*)

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Importance of Controlling Venereal Diseases.—The malevolent characteristic of venereal disease is that it poisons the stream of human life, it attacks the fountain, it pollutes the seed. Other diseases, notably tuberculosis, have a certain hereditary tendency, but this is a wholly different matter from the fundamental and essential malignity of venereal disease, which aims straight at the race's power to perpetuate itself, to reproduce and grow. It is responsible for more than 50 per cent of the race's incapacity to have children—I quote from the British Royal Commission. I have no hesitation in saying that its steady deadliness, continued year in and year out, is greater than the deadliness of wars that break out once every generation or so. Dr. Charles W. Eliot once said, speaking of this and a related disease: "These diseases have proved more destructive to the world since August, 1914, than all the artillery, rifles, hand grenades, and fire blasts." Surgeon General Gorgas, in urging the measures that later on were successfully adopted to control venereal disease within the American army for the period of the war, said that if it were possible to get rid of all the wounds or all the venereal diseases he would rather be rid of the venereal cases.

The mechanism for the suppression of this disease, the worst, from the standpoint of the race as a stream moving from generation to generation, is

under way. Within a short time it is expected to have a clinic in every one of the 740 cities of the country with more than 8,000 population. There will be educational campaigns that will reach every school, every store, and every factory. Venereal disease will be handled as what it is, a dangerous, communicable disease, and in a short time it should be brought as completely under control as has been done with smallpox, hookworm, malaria, and typhoid.

To state it quite simply, this is the most useful thing now being done in the world.—Mark Sullivan, *Colliers*, Aug. 2, 1919. (*J. A. T.*)

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What is the American Standard of Living?—In what is probably one of the most searching studies into this question, Dr. Royal Meeker, of the Bureau of Labor Statistics, has compiled some exceedingly interesting data and points to some striking conclusions. It is his aim to evolve standards for clothing, housing, fuel, house furnishings, education, amusement, medical care and insurance similar to the established dietary standards. Three hundred agents were employed to collect data on annual expenditures of housewives. Nearly 13,000 reports were obtained in this way, coming from 71 large, and 26 small cities, located in different parts of the country, for family incomes varing from $900 to $2,500. From his studies, Dr. Meeker concludes that the American family does not suffer from overeating. In most cases the diet represents less than 3,500 calories per adult male. He finds that with present day prices, it requires from 50 to 60 cents per adult male per day for food in order to obtain a satisfactory, well-balanced diet. For a family consisting of husband, wife and three children under 15, this would necessitate an annual expenditure of $610 per annum for food alone, and an annual income varying from $1,800 to $1,850. Since the average incomes are approximately $1,350, it is obvious that the diet must be restricted, or deficient in some other way. The expenditure for clothing per adult male in 1918 varied from $30 to $180. The average expenditure for clothing for the modal income is approximately $90. Although there is little overcrowding in American workingmen's families, the annual rents paid varied from $105 to $355. For the modal income the annual rent was about $200 per annum. It is believed that American families consume enough fuel and artificial light to be comfortable. The amount of money spent for the care of the health varies considerably in different income groups and in different localities. It is believed to be inadequate for the best interests of the family. It varied from approximately $23 to $125 per annum per family. The average expenditure in this direction would probably vary from $45 to $55 per annum per family. The amount spent varies directly with the size of the income. The different forms of insurance, such as life and health insurance, are also found to be inadequate. The nature of amusements varies considerably. The cost for movies varies not only with the income group, but also with the section of the country. In Philadelphia the limits vary from $0.38 to $37.32 per annum. In Boston they vary from $0.87 to $34.39 per annum. The average for all incomes in Philadelphia was $10.18 per annum and $6.49 for Boston. From the study Dr. Meeker concludes that the wages of the lower income groups must be increased, and that a standard of living must be determined.—*Modern Medicine*, July, 1919. (*M. P. H.*)

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Child Employment Out of School Hours.—Dr. Burpitt in his 1918 report to the Newport (Mon.) Education Committee discusses the effect of employment of school children out of school hours and summarizes his conclusions as follows:

"The body reacts on the mind, and children who work too long, or too hard, are too tired to get the full benefit from their education, and are unfairly handicapped in their competition with those who do not work. Physically, although it is not so easy to show ill-effects or excessive work on a large scale, yet a considerable undermining of the vitality and preparation for future breakdown, occurs, and those in constant contact, such as the teachers, are able to give cases of children who have suffered impairment of health since commencing employment. It is, therefore, essential that every employed child should be under supervision, to ascertain that he is placed in work for which he is fitted, and that the conditions do not become too onerous."—*Medical Officer*, July 5, 1919, 2. (*D. G.*)

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Is the Visiting Nurse a Public Health Nurse?—In the *Public Health Nurse* for July, 1919, Dr. H. W. Hill discusses the question whether the visiting nurse is a public health nurse, and Miss Annie M. Brainard tells why the visiting nurse is a public health nurse. Dr. Hill maintains that a visiting nurse is essentially one whose work is therapeutic in character; whereas a public health nurse is chiefly interested in discovering dangers to health and educating her patients to protect themselves against these dangers. The public health nurse should, however, be able to do actual nursing in an emergency. Miss Brainard maintains that the visiting nurse is a public health nurse because three fourths of her time is spent in instruction and only one-fourth in actual nursing. Besides, the concept of the term nurse now means one who protects health as well as one who cares for the sick.

(*M. P. H.*)

Physical Defects Among Draft Recruits.—A bulletin recently issued by the Surgeon-General's office records the results secured in the physical examination of the first million draft recruits. The findings to be noted below are the result of the reëxamination given at the mobilization camps. The figures show strikingly the large prevalence of goiter in the region of the Great Lakes and the Northwest. Twenty-two per cent of the rejections were caused by a mechanical defect such as flat foot, defects in the bones and joints, hernia, etc.; 15 per cent were due to imperfections of the sense organs; 13 per cent were due to defects in the cardio vascular system; 12 per cent to nervous and mental troubles; 10 per cent to communicable diseases, almost entirely tuberculosis and venereal diseases; 8.5 per cent were rejected because of developmental defects and 6 per cent on account of skin diseases and imperfections of the teeth.

The comparison between men coming from rural and urban communities is interesting. The local boards rejected from certain selected urban districts 21.68 per cent and from rural districts 16.89 per cent. Among urban recruits the total number of defects found was 38.3 per 100, while among rural recruits there were 33.3. Men from the large cities show a much greater proportion of hernia than do men from the rural districts. Venereal diseases are found predominant in the Southern States, while the Northwest has a much lower percentage than any other section of the country. Men from the cities showed 30 per cent more defective vision than men from the country.—Editorial, *Jour. A. M. A.*, July 26, 1919, 272. (*D. G.*)

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Infant Welfare Campaign in Oklahoma.—The Oklahoma Tuberculosis Association has been waging an unusually effective infant welfare campaign this summer. The work is being conducted in Eufaula, Checotah, Clinton, Weatherford, McAlester and Hartshorne. These places represent the more rural parts of the state and are located in McIntosh, Custer and Pittsburg counties. One month is spent in each county; the work is being done in places where modern health activities have never been conducted before.

The mothers are reached in the following way: A local committee is appointed which sends out double post cards to all the mothers in the city asking them whether they care to have their babies examined. If an affirmative reply is received, a definite appointment for a medical examination is made. The stores in the downtown district are also placarded with announcements of the campaign. Hand bills containing the same information are left at each house. Announcements are made from the pulpits, and stereopticon notices are given in the motion picture theatres. A constant publicity campaign in the newspapers is also conducted. The physicians of the community agree to conduct the medical examinations, and the Tuberculosis Association furnishes trained public health nurses. A clinic is established at which there are conferences, demonstrations, exhibits and medical examinations. Samples of model beds, refrigerators, baby clothes, milk bottles and other important things are on exhibition. In addition the nurses visit the mothers in the homes and conduct demonstrations there. The work is under the immediate supervision of Edith Swaine, and Mary B. Hofweister, both of whom are trained and experienced public health nurses. (*M. P. H.*)

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The Agricultural and Industrial Community for Arrested Cases of Tuberculosis and Their Families.—One of the greatest problems in the anti-tuberculosis campaign is the proper care and treatment of patients after they leave the sanatorium. It is a normal thing for the post-sanatorium case, who returns to the city and mingles with old friends, to want to do exactly the same things they do. Very often it is impossible for him to have the environment necessary for the best care and improvement. Too often he is unable to resume his former occupation, or if he is, the conditions surrounding the occupation are not conducive to continued progress. Yet it is exceedingly important for the mental health of the individual, and hence for his physical health, that he realize he is of value to the community and an economic asset rather than a burden. The solution apparently rests in the formation of special communities where these tuberculous individuals may live and work, bring up their families, have the necessary medical and nursing care, and protect their children against infection by open air schools, expert care, and adequate medical attention. Dr. H. A. Pattison suggests that such a community should be located in hilly, woody country, about 100 to 200 miles from a large city, on the main line of an important railroad. It should be able to care for a population varying from 500 to 4,000. There should be an expert, modern health department, excellent water and sewer facilities, periodic and thorough medical examinations of every man, woman and child, well equipped laboratory and hospital facilities and open air schools. Industries should be established and operated in such a way as to benefit the people physically as well as economically. The town should be governed as a business organization and should have a managing director, a director of industry and public works, a director of the department of public health, a

director of education and publicity and an auditor. The keynote of the entire plan, if it is to meet with success, must be social coöperation. The residents for such a community could be obtained from the various sanatoria. It is believed that there would always be a large waiting list among the tuberculous who would be anxious to live in these communities. —*Bulletin 32, Federal Board for Vocational Education*, June, 1919. (*M. P. H.*)

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Nervous Disorders of War in Relation to Employability of Soldiers.—It is natural for the employer to be intolerant of the peculiarities of those suffering from functional nervous disorders, yet it is his duty to coöperate in every way possible with the physician in the restoration to industrial efficiency of those soldiers who during the war have been incapacitated in this way. Every man thus restored is a valuable asset to the community, who otherwise becomes not only an actual loss, but a source of discontent. In many instances all that is necessary is a slight modification of the conditions of work, and a sympathetic understanding and consideration by employers and fellow workmen.

In some cases, however, the expert skill and advice of a neurologist are necessary to reëducate these men and help them to a new mental attitude toward themselves and life. This readjustment does not require long or complicated treatment and has proven most successful.

In practically every instance men suffering from functional nervous disorders have been restored to their full efficiency.

It is, therefore, a patriotic duty that this restoration be done after the war in the same spirit that personal sacrifices were made for the sake of military efficiency during the war.—Tom A. Williams, M. D., of Washington, before *American Academy of Medicine.*

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Does Influenza Predispose to Tuberculosis?—This interesting question which was given such wide and unjustifiable publicity during the pandemic of 1918, has been answered by Buffalo, N. Y. From October 1, 1918, to April 1, 1919, 33,880 cases of influenza had been reported to the health department. Of these 3,179 had died. In the early spring of 1919, each of these cases was visited to determine whether there had been any after-effects. Only 748 of the 33,132 survivors or 2.3 per cent declared any after-effects at all. Two months after this first visit, these cases were inspected again. Of them, 501 had fully recovered, 216 reported that they were improving, and 4 had died. Of the 748, there were 220 who claimed some form of lung trouble. On examination, 28 were found to be tuberculous. Of these 11 had had tuberculosis before they had influenza. There were only 8 cases of new tuberculosis, and some of these gave a history of tuberculosis in the family. It is true that in a normal population of 33,880, it would be expected that 8 cases of tuberculosis would develop. It would seem therefore that influenza did not predispose to tuberculosis. If there had been the same number of cases of typhoid fever, or measles or any other major disease, the after-effects would have been much more severe.—Dr. W. A. Evans. *Literary Digest*, September 13, 1919.— (*M. P. H.*)

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Infant Death Rate Low in Newark.—According to a statement credited to Dr. Julius Levy, head of the bureau of child hygiene of the Newark Department of Health, the infant death rate of that city has been diminished from 123 per 1,000 births in 1910 to 77.1 in 1919, due to the intensive campaign which has been waged to conserve child life. This is true in spite of the fact that 50 per cent of the population in Newark is foreign born, and that 50 per cent of the children are delivered by midwives. The infant welfare campaign has brought about a great improvement in the methods and practices of midwives. The infant death rate for Newark during the first six months of 1919, compared to other large cities, follows: Newark, 77.1; St. Louis, 84.2; New York City, 87.2; Manhattan, 92.0; Philadelphia, 88.9; Baltimore, 94.4; Cleveland, 96.9; Detroit, 107.2; Buffalo, 121.0; Pittsburgh, 133.1; Chicago, 100.2.—*New York Times*, August 23, 1919. (*M. P. H.*)

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Status of Prophylactic Vaccination Against Influenza.—Many vaccines for prophylactic use against influenza-pneumonia have been developed and used. Owing to the lack of knowledge regarding the definite etiological factor, it has been impossible to develop a vaccine from such an organism. Vaccines made from the Pfeiffer bacillus, and from mixed cultures containing pneumococci, hemolytic streptococci, *Staphylococcus amens* and Pfeiffer's bacillus, have been used without definite valuable results. Carefully controlled experiments in Massachusetts, and at the Pelham Bay Training Station, and at Paris Island and other places, have shown that influenza occurred just as frequently among the vaccinated as among the unvaccinated, and that the deaths from influenza were about the same in both groups. Similar results were obtained with the use of commercial vaccines. Where vaccines have been tried under perfectly controlled conditions negative results have always been obtained.—Dr. G. W. McCoy, *Jour. A. M. A.*, August 9, 1919.—(*M. P. H.*)

STATE HEALTH NOTES—LEGISLATION.

Massachusetts.—Following is a summary of new laws which pertain to public health, enacted by the Legislature during the session:

General Act, Chapt. 27. An act relative to the duties of members of Boards of Health acting as inspectors of slaughtering. Inspector, appointed by the Board of Health, shall be present at all licensed slaughter houses upon the days designated for slaughter by license, and examine carcasses of all animals. May seize and cause to be destroyed any carcass, meat or product thereof found to be diseased, corrupted, unwholesome or unfit for food.

G. A., Chapt. 28. An act relative to the cold storage of articles of food. State Department of Health shall inspect and supervise all cold-storage ware-houses. No article of food intended for human consumption shall be placed in or retained in, cold storage, if tainted, diseased or otherwise unwholesome.

G. A., Chapt. 32. An act relative to county tuberculosis hospitals. Time for construction, additions, etc., of buildings extended to April 1, 1921. "Adequate" hospital provision means at least one hospital bed for each four deaths from tuberculosis in the community served by hospital, as determined by average number of deaths per annum for 1911 to 1915 inclusive.

G. A., Chapt. 123. An act relative to the sale of materials used in the manufacture of mattresses and similar articles. No second-hand material may be sold or offered for sale, if same is represented as new material. Punishable by a fine of not more than $500.00 or by imprisonment for not more than six months or by both.

G. A., Chapt. 142. An act relative to the registration of nurses. A nurse to be eligible for registration must be at least 21 years of age, good moral character, and a graduate of a training school for nurses approved by the board. An applicant failing to pass the examination may take another examination within a year without paying a second fee of $5.00. There shall be a yearly fee thereafter of fifty cents.

G. A., Chapt. 195. An act to provide for the regulation and licensing of day nurseries. Shall be licensed by local boards of health and renewed annually. A fee of $1.00 is charged for issue or renewal. Nurseries shall be visited or inspected at least once a year. After 30 days' notice to licensed day nursery and opportunity for hearing, the local board may revoke license.

G. A., Chapt. 217. An act relative to the powers of cities and towns in respect to public recreation, playgrounds, and physical education. Any city or town may acquire land and buildings within its limits by gift, purchase or right of eminent domain, or may lease same or may use land or buildings already owned by it, for public playgrounds or recreation center and may charge admission for activities relative to recreation etc. Also it may employ teachers or other officials and fix their compensation.

G. A., Chapt. 304. An act to provide for the admission to certain state institutions of persons affected with incurable diseases. A person who has been a resident of commonwealth for not less than two years and who has any incurable disease except mental defect or leprosy, may be admitted to such state institution under the supervision of the State Board of Charity as may be designated by the board. Expense of maintenance shall be paid by patient or by relatives bound by law to maintain him. If they are unable to do so, then the city or town where he has a legal residence, shall pay, and in case he has no such residence in a city or town, the expense shall be paid by the commonwealth.

G. A., Chapt. 317. An act relative to the granting of plumbers' licenses to certain soldiers and sailors. A credit of 5 per cent to be given to each applicant who has served in the Army or Navy in time of war, and honorably discharged or released from active duty.

G. A., Chapt. 318. An act to provide for the establishment of free clinics and a registry for the feeble-minded. The Commission on Mental Diseases may establish and maintain free clinics for the feeble-minded and employ such persons as may be required to conduct them. The commission shall establish and maintain a registry of feeble-minded, records not to be open for public inspection.

G. A., Chapt. 333. An act to make certain substantive corrections in existing laws. (7) Amendment allowing burnt, dilapidated or dangerous building to be adjudged a nuisance. (9) Amendment providing that five or more persons may form a corporation for cremation.

G. A., Chapt. 351. An act to regulate the sale and cold storage of fresh food fish. Different grades of fish designated: "First grade," new fish, suitable to be offered for sale as number one fish or shore fish; "second grade," all other fish in suitable condition to be offered for sale as fresh fish; "third grade," fish which are suitable for splitting, salting or otherwise preserving but not for fresh fish. Grades must be stated when offering for sale. Cold storage fish must be so labeled. State inspector of fish to be appointed, by the governor and council.

G. A., Chapt. 360. An act regulating the sale of alcohol. Registered druggists alone may manufacture or sell wood alcohol, and he is licensed to do so by local Board of Health. Fee required of $1.00

yearly. Licenses may be revoked by board. Denatured or wood alcohol must be labeled in red letters, "Deadly poison," name and place of business of vendor and number of license. Also it must bear the words "Not for internal use. Causes blindness. Keep from the eyes."

Special Act, Chapt. 1. An act making appropriations for sundry emergency expenses on account of present war and epidemic of influenza. $10,000 for reception and entertainment of soldiers and sailors, and $5,000 for expenses incident to the spread of influenza in the commonwealth.

S. A., Chapt. 25. An act to abolish the board of health and inspector of milk of the city of Quincy and create the office of health commissioner.

S. A., Chapt. 95. An act to establish the office of commissioner of health for the city of Cambridge.

S. A., Chapt. 134. An act authorizing the city of Quincy to establish a hospital.

S. A., Chapt. 153. An act making appropriations for maintenance of departments, etc.:

State Department of Health.

Division of Administration	$19,500.00
Division of Hygiene	27,850.00
Division of Communicable Diseases	101,350.00
Antitoxin and vaccine lymph	24,300.00
For services and supplies in connection with antitoxin, etc.	26,000.00
Mfg. and distribution of arsphenamine	19,200.00
Division of Food and Drug Insp.	34,000.00
Division of Water Supply and Sewage Disposal	82,000.00
Total	$334,200.00

In addition there were resolves relating to half a dozen reports by the State Department of Health.

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New Mexico.—Chapter 85 of the laws of this state, enacted the present year, provides for the creation of a State Department of Health, to be composed of a State Board of Health and a Commissioner of Health. Three persons, not more than one of them to be a licensed physician, will comprise the board, the members of which are appointed by the governor for terms of six years, staggered. The term of the medical member is to expire on January 1, 1921. Organization is provided for, to include a chairman and a secretary, with at least one meeting each year. The board is authorized to hold hearings, and make and enforce regulations relating to quarantine, sanitation and the public health. The board is to serve without salary but members shall receive actual and necessary traveling expenses while absent from their homes on meetings of the board.

The State Board is to appoint a commissioner, to continue in office at its pleasure, salary not to exceed $3,000 a year. He must be a person having experience and special training in sanitary science and public health administration. He is to be the administrative head and shall devote his entire time to his official duties. He is to take oath and furnish surety a bond. He is empowered to employ assistants at a total of salaries not exceeding $10,000 a year, and shall sign the vouchers for expenditures.

His powers are outlined quite fully in the act, and his duties are to include the collection, compilation and tabulation of reports on marriages, births, deaths and morbidity. His powers are quite broad and cover the usual functions of a state board. He is to publish regulations and orders, and is quite free to use the press in such ways as may seem desirable to him.

Provision is made for county health officers and municipal health officers, to be appointed with the approval of the State Board. The medical member must be an M. D. with his degree from a college which requires a four-year course or a three-year course supplemented by at least two post-graduate courses, and he must have had at least two years' hospital experience.

There are further sections with reference to publication and enforcement of regulations, the reporting of vital statistics, abating of nuisances and other matters generally included in the fundamental acts establishing health departments. Freedom is permitted individuals to select the physician or mode of treatment without interference. Where right of entry is refused to a health officer, a warrant may be procured from the court and some constituted health authority is to accompany the sheriff to direct him in the service of the writ. Isolation may be enforced by a writ of the court. "Suitable provision" is to be made for the inoculation of the inhabitants of the state with cow-pox vaccine. Exemption from vaccination of children may be secured by filing the certificate of a duly licensed and practising physician.

Provisions are made for the transportation of the dead, for the costs of the administration of the law, and for raising funds during an epidemic, for which money may be borrowed if necessary up to a limit of $25,000. The act is supplemental to a previous one in items not repealed. In order to make the act operative at once, the legislature declared an emergency to exist and put the act into full force and effect from and after the day of its passage and approval.

STATE HEALTH NOTES—GENERAL.

California.—The State Board of Health has been using a floating laboratory (illustrated in the JOURNAL for September, page 649) in its parasitological work in the Delta regions of the San Joaquin and Sacramento rivers, because it will be impossible to carry on field work in this inaccessible region without having a laboratory close at hand where living quarters can be provided. One or two men have lived on the boat ever since it was placed on the Delta, excepting during the summer months when the weather has made it almost impossible for the workers to continue their labors. The boat is equipped however for examinations and an increased number will be made when the work is taken up again in the fall. The object of the work on the laboratory is to make a survey by fecal examinations of the intestinal parasites of Japanese, Chinese, Hindus, Mexicans and other races resident in California. The Delta was chosen for this work on account of the mixing of population there. It is planned to make between five hundred and a thousand examinations from each of these races covering not only the Delta region but other parts of the state to determine just what the menace is from the foreign population in California in the spread of diseases produced by animal parasites. So far, in actual connection with the work on the floating laboratory about five hundred fecal examinations have been made from Japanese, both for intestinal protozoa and intestinal worms. Some Hindu examinations have been made and numerous futile attempts to get samples for examination from the Chinese have been taken up. In addition to the actual collecting of samples for examination, inspections and reports have been made of the sanitary conditions of a number of camps in the Delta of the different races, especially in regard to the methods of fecal disposal and other things which would have to do with the spread of parasitic diseases. The Bureau of Sanitary Engineering is working on a water-purification plant which will be installed on the laboratory early in the fall and which will be a demonstration to the people there of a simple method of water purification. The work consists not only in the investigation of the prevalence of animal parasites, but has also to do with the inspection and control of the sanitary conditions influencing their spread. Another feature of the work of the laboratory is making it a center of exhibits for animal parasites. This has been done to a certain extent and plans are under way for the carrying out of that feature more completely when the work is resumed on the boat in the fall. It is planned during the next winter to use the laboratory as the center for the collection of a thousand or more further samples from Orientals in the Delta, especially the Chinese, and from Mexicans, so that the work will probably be carried on in the laboratory for the greater part of the coming year. The utilization of this boat has made possible for the men of the Division of Parasitology to come into very close contact with the people of this region to study carefully the sanitary conditions and to obtain more easily the coöperation which is so difficult in dealing with Orientals. If when the preliminary report of this Oriental work is ready the State Board of Health determines to adopt active methods for further examinations, treatment and control, the laboratory will make possible a more extensive campaign throughout the whole Delta region and other regions of similar character in the state.

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District of Columbia.—The Congress of the National Women's Trade Union League, meeting in Washington October 23–29, has some broad health propositions in its general plans. Each organization is urged to prepare material on these subjects:

Employment of women before and after child birth, with reference to restrictions, provision for care and pending or proposed legislation.

Employment during the night.

Employment of women in unhealthful processes. There will be discussion as to whether improvement can be secured through international action.

Employment of children is also to be taken up in items, first, age limit, then night employment, and unhealthful processes, and whether the situation is to be bettered by international action.

The 48-hour week will be one of the topics, and the question of providing against unemployment, and other allied subjects. Further along the line of direct health matters there will be a consideration of the question whether the importation of white phosphorus matches has been discontinued.

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Florida.—On August 16, the Escambia County Tuberculosis Association was formed at Pensacola. This association is planning to establish a clinic and nursing service. It is the fifth county to organize in this way for tuberculosis work. Volusia County has secured enough signatures to call for a referendum vote for a county sanatorium. The executive secretary of the Florida Anti-Tuberculosis Association, Mr. R. H. Hixon, had the energy to secure clergy rates for its workers when it is necessary for them to travel by rail. These rates had been refused, but gathering evidence about the practice in other sections of the country Mr. Hixon made a personal appeal to the local administration and carried his point.

Georgia.—A conference of the state and county health officers was held at the headquarters of the State Board of Health in Atlanta, Ga., on July 30–31, Dr. M. F. Haygood being the presiding officer. Dr. J. W. Hurt, visiting physician, spoke on the medical inspection of school children. Surgeon Joe P. Bowdoin, venereal control officer for Georgia, spoke on V. D. legislation and deplored the fact that appropriations are difficult to obtain in Georgia. Dr. W. A. Davis, director of the Bureau of Vital Statistics, called attention to the fact that city clerks are registrars in cities and towns, and in the outside districts the justices of peace are to undertake this work.

Mr. Joseph P. Faulkner, secretary of the Raoul Foundation, discussed the need of organization for the control of tuberculosis, and said that despite the fact that Alto could become the Saranac of the South, it is difficult to obtain financial support for the work. Dr. Haygood closed the morning session of the first day with a review of the small things that handicap the health officer.

The afternoon was given over to laboratory discussion; Mr. T. F. Sellers, director of laboratories, discussing the instructions for sending samples; and Mr. L. E. Webb, serologist, speaking of the Wassermann reaction and later outlining the interpretation of laboratory reports. Dr. C. C. Applewhite, U. S. P. H. Service, spoke of the privy and discussed the forms applicable for small towns and cities and the types suitable for the rural districts.

On the second day of the conference malaria was considered by Dr. G. M. Anderson, commissioner of health of Moultrie, Ga., with especial reference to improvements in his own city; Dr. John Schreiber spoke about physical education in the schools, and noted that the country boy could always be distinguished by his posture; Dr. R. W. Todd, commissioner of health at Brunswick, Ga., read a paper on the sanitary handling of food products; Dr. O. H. Cheek, commissioner of health at Dublin, Ga., spoke about hookworm eradication; Dr. T. W. Taylor of Sylvester, Ga., started a discussion about sanitary closets"; and Dr. R. A. Herring, commissioner of health at Milledgeville, Ga., presented an important paper on "Communicable Diseases." Other speakers were Dr. R. L. DeSaussure, commissioner of health for Floyd County, Ga., and Dr. B. F. Bond, commissioner of health of Americus, Ga., whose topic was typhoid vaccination.

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Illinois.—The State Department of Health has just issued a thirty-two page circular on the care of babies under the title "Our Babies—How to Keep Them Well and Happy." This is an entirely new circular and takes the place of the one issued in 1917, hundreds of thousands of which have been distributed throughout the State. The Annual Better Babies Health Conference was conducted by the State Department of Public Health in connection with the Illinois State Fair. These conferences have become annual affairs, and the conference this year was larger than ever before. A special feature has been the examination of babies by the attending physicians.

Samuel J. Kessinger, of Litchfield, has been appointed acting chief of the Division of Public Health Instruction of the State Department of Public Health.

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Indiana.—At the conference in Hammond, Ind., of the Lake County Public Health Society on the evening of September 9, the meetings of three sections were conducted, public health, industrial and nursing. In the first-named section, the chairman, C. M. Reyher, M. D., health commissioner of Gary, Ind.; William Buchanan, health commissioner of Hammond, Ind.; F. A. Malmstone, M. D., health commissioner of Griffith, Ind., and R. P. Hale, Lake County health commissioner were all speakers. In the industrial section Ira Miltmore, M. D., of the Indiana Steel Co., Gary, Ind., chairman; together with Mr. John A. Gross, general manager of the American Sheet Mill, Gary, Ind.; and H. C. Groman, M. D., were speakers. In the nurses' section Miss Della Glenn, chairman; Miss Hauswald of East Chicago, Ind., and Miss Pauline Kuehler of Whiting, Ind. and Miss Johnson, just returned from service with the A. E. F. addressed the gathering.

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Kansas.—When a person who has had the influenza laughs at the idea of going to a doctor and feels inclined to crack a joke at the pills and potions he would receive let him remember that the American public each year buys thirty times the pills and potions prescribed by the entire medical profession and that the aftermaths of the "flu" are serious and failure to see the doctor now may cause him to later become one of those who swell the list of buyers.

A study of egg substitutes would indicate that manufacturers are exploiting the name of a highly valuable food to further the sale of their products. The claim of most of the manufacturers is that one teaspoonful of the egg substitute is equal to one egg in baking and cooking. That this claim is not always true is shown by one case in which claim was made, on the carton, that the contents of the package was equivalent to 12 eggs. Analysis showed that on a protein basis it was equal to only 1.7 eggs. On a basis of fat value it was equal to but fourteen hundredths of an egg, while the fuel value was equal to only 2.6 eggs. (*M. T.*)

Louisiana.—The program for the meeting of the American Association Medical Milk Commissions, which meets in New Orleans at the same time with the American Public Health Association, October 27–30, 1919, is the following:

President's Address—A. F. Furrer, M. D., Cleveland, Ohio.

Report of Commissions.

Inspected Milk—L. R. DeBuys, M. D., New Orleans, La.

Changing Methods in the Production of Certified Milk—Prof. F. W. Howe, Boston, Mass.

Dry Sterilization of Dairy Utensils—Harris Moak, M. D., Brooklyn, N. Y.

Human and Bovine Tuberculosis—A. Review, Prof. M. P. Ravenel, University of Missouri, Columbia, Mo.

Production of a Safe Milk for Infants—W. H. Price, M. D., Assistant Director of the Service Investigations of Child Hygiene.

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Massachusetts.—Harvard University announces that Dr. Thomas M. Legge, chief medical inspector of factories in Great Britain, has been invited to give a course of Lowell lectures and the Cutter lectures in preventive medicine for the coming year. These lectures will be given under the auspices of the School of Public Health of Harvard University and the Massachusetts Institute of Technology, and the division of Industrial Hygiene. Dr. Legge will lecture in Boston on November 18 and ensuing dates upon the following subjects:

Twenty Years' Experience of the Notification of Industrial Disease.

Twelve Years' Experience of Workman's Compensation Act and Industrial Diseases.

Medical Supervision in Factories.

Industrial Poisons and Their Prevention.

Anthrax.

Fumes and Gases.

Industrial Fatigue.

Industry as a Subject for Art.

Manufacture under the Mediaeval Trade Guilds.

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Michigan. Health District No. 1-A, Grosse Point.—Lying to the east of Detroit along Lake St. Clair are the beautiful suburbs of Grosse Point Park, Grosse Point Village, Grosse Point Farms and Grosse Point Shores, comprising four incorporated villages, each with its fine municipal building and boards of trustees. In 1916 an epidemic of typhoid fever occurred in these villages and its cause was traced to the milk supply. The advisability of establishing adequate health protection was very apparent and the heads of the four village governments had a conference to formulate plans for such protection. Under the leadership of Mr. George Osius, the president of Grosse Point Shores, a bill was drafted and passed by the State Legislature, authorizing the forming of district health boards by contiguous villages and townships. Health District No. 1-A, Wayne County, Michigan, comprising the four Grosse Point Villages, was at once organized with the following officers: George Osius, president; Paul H. Deming, treasurer; Dr. L. E. Maire, secretary; and Richard T. Connor. Dr. Don L. Griswold was engaged as full time health officer. Dr. Griswold had been prominent in public health and research work for several years. He was for some time with the Rockefeller Institute and while there was sent on research work to the West Indies. After serving six months at Grosse Point he joined the Colors and was succeeded by the present health officer, Dr. Benjamin H. Warren. For several years there has existed in the Grosse Point Villages a most worthy organization, the Mutual Aid and Neighborhood Club, composed of women and sustained by private subscription. Besides doing much in worthy charity and social and child welfare work, this organization has established a Cottage Hospital for maternity cases, and infant and child welfare clinics. In coöperation with the Board of Health, tonsil, adenoid and circumcision cases are operated at this hospital. The hospital has the hearty coöperation of prominent Detroit surgeons, Drs. Shurley, Hickey, Ware, and McCeue, being on the staff. Dr. Belanger, prominent for many years, in Grosse Point, has given his hearty coöperation in all public health activities. The health department also has fine coöperation from the Police Departments of the four villages. There are about twelve hundred school children in this health district. Each of the four school buildings is equipped with a dental room and a full time dentist is employed by the health district. Regular school inspections are made by the health officer and a mental survey is made in each school. The drinking water and milk supply of the district are tested regularly. Arrangements are about completed to have the garbage collection system of Detroit extended to this district. The Detroit Board of Health has extended splendid coöperation with the Grosse Point Board.

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Minnesota.—In the *Minnesota Public Health Association Journal* for March 20, 1919, the idea that persons suffering from tuberculosis should not be vaccinated against smallpox because of the supposed bad effect of vaccination on the patient, was disproven. Now the *American Review of Tuberculosis* for February states that tuberculosis patients can also endure the anti-typhoid inoculation with-

out bad effects or retardation of the arresting of the disease. It would appear that inactive pulmonary tuberculosis exerts no appreciable effects upon the course of typhoid fever, but that active pulmonary tuberculosis may influence typhoid and render recovery less likely.

Cancer is one of the chief causes of death, the annual mortality in the United States being estimated at 80,000 as compared with about 150,000 deaths from pulmonary tuberculosis. Cancer is essentially a disease of adult life. Of the 80,000 deaths approximately 85 per cent at ages of 45 and over. At ages over 40 cancer causes one death out of every eight among women and one out of every fourteen among men. Cancer appears to be on the increase in every civilized country. Whether this increase is real or can be attributed to improved medical diagnosis and better statistical methods is a source of much controversy. If people could be taught to consult with their physicians when suspicious lumps developed many a case of cancer that would become hopeless could be detected in time and removed.—*Minnesota Health Journal*, July 24, 1919. (*M. T.*)

New Mexico.—The State Board of Health, created by an act of the last State Legislature, has completed its organization, selected its staff and commenced actual work, with Dr. C. E. Waller as commissioner of health. Dr. Waller has appointed Harold S. Gray as head of the Division of Sanitary Engineering and Sanitation and Dr. G. S. Luckett as head of the Division of Preventable Disease. Mr. Gray has been connected with the California State Board of Health while Dr. Luckett has been employed by the Alabama board. Dr. Waller will assume temporary charge of the divisions of Vital Statistics and Public Health Education. The Board of Health has adopted regulations for the reporting of births and deaths following those now in use in the registration area. The provisions of the model law recommended by Federal health authorities have been embodied in the regulations for the reporting of preventable diseases.

In the Division of Preventable Diseases it is proposed to establish in the near future a Public Health Laboratory. Plans for the establishment of this laboratory in coöperation with the University of New Mexico, at Albuquerque, are now under consideration. It is proposed to establish also the Division of Public Health Nursing in the near future.

New York City.—Dr. R. S. Copeland, commissioner of health of the City of New York, has announced that in the near future the Health Department is to be housed entirely in its own building, which will be erected at a cost of $1,000,000 and will be the finest health headquarters in the world. The structure will be at least twelve stories high and will be located on the north side of Thirtieth street between Sixth and Seventh avenues.

National Information Bureau.—To protect the contributing public and to assist in the conservation and proper distribution of the charitable resources of the country during the reconstruction era the National Investigation Bureau has been reorganized and launched on a permanent program under the new name of the National Information Bureau.

The reorganized agency will undertake to accomplish three purposes:

1. The establishment of reasonable standards of administration and work for national social and philanthropic agencies and the endorsement of agencies which meet these standards.

2. The protection of the public from imposition.

3. The assisting, so far as may be possible, of national agencies in their efforts to adapt their programs and their work to each other and to the communities in which they are engaged.

Officers of the bureau are as follows: President, Gustavus D. Pope, Detroit; first vice-president and treasurer, Paul L. Feiss, Cleveland; second vice-president, Paul Cravath, New York; secretary, Allen T. Burns, New York; director, Barry C. Smith, New York. Headquarters will be maintained in New York City.

In connection with the International Exposition of Municipal Equipment, which is to be one of the grand divisions of the Merchants and Manufacturers Exchange in the Grand Central Palace, New York City, it is proposed to establish a permanent health center which will serve to demonstrate the kind and amount of apparatus and equipment necessary for such an undertaking. The general arrangement of the health center will be under the direction of Mr. B. R. Rickards of the New York State Department of Health.

New York State.—During the last two years it has been impossible to continue the conferences of the health officers and sanitary supervisors in the various districts of the state on account of the war activities. During September and October this year the fifteen sanitary supervisors are holding in their districts their usual conferences with their health officers. The conferences aim to secure the adoption of a uniform sanitary code by municipalities which have not already done so, and also the adoption of amendments which will bring the codes up to date, by cities which have adopted the code,

suggested by this Department. To date this code has been adopted by 750 municipalities.

Another measure presented at these conferences is the uses which can be made of public health nurses in rural communities. It is proposed to have the public health nurses of the district attend these conferences. Local problems are also discussed and the meetings are illustrated by moving picture films on venereal disease, which has been so successfully used in the A. E. F.

A tabulation of the reports of health officers in their sanitary reports for the year 1916 has recently been compiled. From the statement of health officers in the rural districts in the state of New York it would appear that during that year the average amount paid per capita for health work in their municipality was nineteen cents. In one village the per capita expense was $1.34 according to the statement of the health officer.

An outbreak of diphtheria at Crystal Springs, Wyoming County, has recently been checked. The outbreak was limited to 17 cases and 35 diphtheria carriers were discovered. Only one case occurred on a dairy farm. The action of the local Health Board was prompt and effective.

Last year the department prepared a score card for the health activities of the various cities of this state. Dr. C. C. Duryee, state sanitary supervisor, was detailed to interview the health officers and mayors of the cities for the purpose of scoring this work. The results have been most gratifying. Great interest was aroused and many improvements have been instituted. Dr. Duryee has again been assigned to this duty and during the next few months will again interview the mayors and health officers for this purpose. The score card has been improved and it is believed that the results will be even more effective than in the past.

A health meeting was held on the Tonawanda Indian Reservation on August 27, under the direction of Mrs. E. M. Finigan and Miss Mathilde Kuhlman, supervising nurse. The meeting was opened by Mrs. Finigan who briefly outlined the purposes of the survey, meeting and clinic. The chief of chiefs, Mr. Solan Skye, then addressed his people in the Indian language asking them to give attention to the advice given them by the speakers of the evening and to bring cases for examintion at the following day's clinic. The other speakers were Dr. Edward Clark and Dr. Halsey J. Ball, state sanitary supervisors. The state health film, "In His Father's Footsteps," was also shown. The clinic which was held on the following day was very well attended.

During August a committee composed of representatives of various associations in Ithaca having health committees was formed for the purpose of coördinating the work of these organizations and to promote health interests generally.

In order to overcome hay fever among tuberculosis patients in the vicinity of Saranac, the health officer of that town, Dr. C. C. Trembley, has adopted the plan of offering to pay 25 cents a bunch of 100 rag weed stalks.

The establishment of a general clinic in Elmira to include the child welfare work and measures against tuberculosis and venereal disease was recently authorized by the Board of Health in the city of Elmira. The child welfare and tuberculosis work is being conducted at the present time under the direction of Miss Anna M. Thompson, public health nurse.

The first operative clinic ever held in a rural district in Monroe County was recently held at Henrietta at which time 20 children were examined at the Grange Hall where a clinic was held. Surgeons from Rochester were present, assisted by nurses from a number of other communities. Miss Roberta Leslie, supervisor of community nurses for Monroe County, was the originator of the idea of opening an emergency hospital for the purpose in the community where the children lived. The Henrietta clinic was followed by one at Honeoye Falls, at which 24 children were present.

Miss Hazel I. Stewart, county nurse for Steuben County, in her annual report for the year ending July 1919 shows that 107 new positive cases of tuberculosis and 93 suspects were discovered during the course of her year's work. In addition she visited 192 patients, called at 134 homes, visited 29 schools, interviewed 202 physicians and health officers, made 258 coöperative visits, and investigated 10 factories, besides giving 27 talks and attending 23 meetings and 26 tuberculosis clinics.

Recent visits to the venereal clinics throughout the state show a healthy growth. In most instances the number of patients is steadily increasing, the increase being due to greater publicity, educational efforts and last but not least, due to the interest of the medical officer in charge of the clinic. A physician either can make or break a clinic; the impression he makes upon the patient on the occasion of his first visit will often determine how much follow-up work will be necessary in that case.

A course in Public Health Nursing is offered by the University of Buffalo, in coöperation with the Buffalo City Department of Health, the Department of Hospitals and Dispensaries, the District Nursing Association, and the Buffalo Chapter of the American Red Cross.

The course started on September 29 and continues for sixteen weeks. About half the allotted time is

devoted to lectures and class work, and the balance to field work. A certificate will be given to students who satisfactorily complete the course. Applicants must be registered nurses in New York State, or registered in states having equivalent standards, and must be in good physical condition. A limited number of scholarships will be awarded for exceptionally well qualified candidates who are unable to take the course for financial reasons. The class is limited to 30.

At the recent tuberculosis clinics held at Gouverneur and Ogdensburg, 24 physicians attended personally and took part in the demonstration of the newer methods of chest examinations given by Dr. Bray of Raybrook Sanatorium and Dr. Kolb of Holtsville Sanitorium. Thirty-eight physicians sent patients to these clinics; 21 patients were X-rayed and by this means 5 were definitely diagnosed as being tuberculous. Messrs. Sampson and Autenreith of Trudeau Sanitorium had charge of making of the stereoscopic plates.

In order to stimulate interest in child welfare and other health work, the Westchester County Chapter of the American Red Cross has equipped a model child welfare station in the interior of an auto truck and has sent this exhibit into a large number of the towns in Westchester County. The local Health Departments, Red Cross Auxiliaries and Visiting Nurse Associations coöperate in making arrangements for the exhibit in their various localities and when the exhibit arrives in a community it is placed under the direction of the local public health nurse, and the state and the county health nurses attached to the exhibit act as her assistants. In this way great interest is stimulated in the various localities. Meetings are held in the evening at which health films are shown. The health officer of the community is speaker at these meetings and other professional health workers give five minute talks.

Little Mothers' League Clubs have been organized in nearly every town visited.

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North Carolina.—Millard Knowlton, M. D., who has been engaged in health work in Montana, has been appointed in charge of the V. D. work for the State Health Department.

Dr. F. M. Register, who has been health officer of Northampton County for two years, has resigned, to accept the position as chief of bureau of epidemiology with the State Board of Health.

Mr. H. B. Larner, of Cambridge, Mass., has been appointed health officer of Goldsboro.

In promoting public health through the regular advertising columns of newspapers North Carolina again sets a pace for the rest of the country in public health work. The idea was first utilized by Dr. J. S. Mitchener, county physician of Chowan County, in connection with the anti-typhoid vaccination campaign carried on there some weeks ago. Through the coöperation of business firms considerable space was used to advertise the various dispensary points in the county. Following this upon a larger scale Dr. L. J. Smith, whole-time health officer of Wilson County, recently used three issues of a local daily in forcibly bringing before the people of his county the importance of health work, and particularly the work against typhoid fever which is the most easily preventable of all preventable diseases. About 60 per cent of the advertising space in each of these issues was devoted to a message on health, the space being donated by the regular advertisers.

Venereal diseases with a total of 779 reported cases in June head the list of contagious diseases for that month, displacing whooping cough with 614 reported cases and measles with 499 reports which from time immemorial have headed the list. There were 432 cases of typhoid reported in June and more to be expected in July and August, when the fly gets in its deadly work.

The State Board of Health has taken steps towards an active coöperation with the American Red Cross with view of serving greatly increased public health nursing facilities in the state.

Both physicians and druggists are in general showing a keen interest in the efforts being put forth by the division of venereal diseases to secure complete reporting and are coöperating in fine spirit. Some physicians, however, are not complying, as indicated by the fact that 41 counties failed to submit any reports for June.

The State Board of Health has turned the pitiless light of publicity on the various resort hotels in the state that permit insanitary conditions. Publicity is far more effective than fines in securing reforms that prevent hotels from falling below the standard established as safe for health of the patrons.

An average of 75 children a day examined and treated in a single week, is the record of the dentists conducting free dental clinics in eight counties under the direction of the State Board of Health. Nearly a thousand treatments were given during the week, which establishes a new record for efficiency in this line of work.

About the first of July the eighth clinic for the treatment of venereal diseases in North Carolina was established at Clinton the county seat of Sampson County. Unlike the other seven clinics which have been located in the larger cities of the state the one at Clinton was established with view of extending the work to rural communities. If the experiment is successful steps will be taken to establish

others in the smaller towns. The work at Clinton will be done by D. E. T. Hollingsworth, whole-time health officer for the county, in coöperation with the bureau of the State Board of Health.

The nine counties coöperating with the State Board of Health through the establishment of county health departments with whole-time officers in charge come forward with the best report for the past month yet achieved in this work. A total of 14,502 people were vaccinated in the campaign against typhoid fever, and in the same period a total of 969 sanitary closets were built, these being largely in the rural sections of the counties. These two items are merely the high spots in the work accomplished.

The educational work along health lines in these counties are summed in the following statistics: 113 public meetings held; attendance upon these meetings, 11,485; letters sent out, 2,857; newspaper articles on public health matters published, 157.

"The Child of the Pre-School Age" a pamphlet issued by the Bureau of Infant Hygiene clearly points out the damage of neglecting the small child that can apparently take care of itself. The child of four is commonly superseded in the nursery by another baby who occupies the time and attention of its mother and so is left to its own devices. It falls into bad habits of eating and resting and diseased conditions of the adenoids and tonsils may develop unnoticed. The little pamphlet warns the parent of the damages of this period. (*M. T.*)

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Tennessee.—The division of venereal diseases of the State Board of Health was opened August 1, 1919, with a representative of the Public Health Service as medical officer in charge. During the month considerable educational work was done through the newspapers of the state and lectures, and informal gatherings have been addressed in the five principle cities. Clinics are being organized in these cities and an intensive campaign is being inaugurated. Report forms for the reporting system are now in the hands of the physicians of this state and the indications are that the Tennessee physicians are coöperating fully. Detention homes have been provided in two of the principal cities and law enforcement as well as medical phases are being rapidly worked out.

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Texas.—H. C. Hall, M. D., resigned in August as director of the bureau of venereal diseases of the State Board of Health. Dr. Oscar Davis, former assistant state health officer, has been appointed to the vacant position.

Dr. M. E. Parker, registrar of vital statistics, and secretary of the State Board of Health, tendered his resignation on August 18, and entered the service of the U. S. Public Health Service as quarantine officer for the port of Laredo, Texas.

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Wisconsin.—The outbreak of anterior poliomyelitis in Milwaukee, County, Wis., starting about the first of July, reached a total of 67 cases and seven deaths up to the middle of August, most of the cases being in the city of Milwaukee. On the last named date the total cases in the state were 95, with 15 deaths. The Milwaukee epidemic was then noticeably on the decline, the city's cases being reduced to 37. The other cases were well scattered throughout the state.

Green Bay, Wis., has established a health center, where will be combined all organized activities for promotion of health, sanitation and hygiene in the city and county. Dr. F. J. Gosin, formerly in military service, has been made the city's first full-time health officer and will be city physician as well. Establishment of a municipal laboratory is in the program of the new health department. A venereal disease clinic is already in operation, and during July more than 80 cases were treated. Dr. E. S. McNevins has been appointed to have charge of the clinic. Mrs. Ada O'Shaughnessy, city nurse of De Pere, Wis., has joined the health center staff.

Despite the high influenza mortality last year, Wisconsin's death rate during the second quarter of 1919 was lower than the average for the eleven-year period, standing at 11.1. Decline in nearly all other communicable diseases is held responsible for the lower rate.

Dr. Gustav L. Windesheim, full-time health commissioner of Kenosha, Wis., has been appointed by Governor Philipp as a member of the Wisconsin State Board of Health, succeeding Dr. J. M. Furstman, formerly of La Crosse.

Rock County, Wis., has purchased a large tract of farm land near Janesville as the site for a county tuberculosis sanatorium.

Madison, Wis., will establish a venereal disease clinic, to be supported by the city, state and federal government coöperatively.

Stoughton, Wis., will establish a public health clinic. Miss R. Claire White, of Madison, is to be public health instructor for Stoughton.

Miss Genevieve Russell, R. N., has been appointed public health nurse for Laona township, Forest County, Wis., the first township nurse of which the state has any record.

A new hospital is to be opened at Superior, Wis., by the sisters of St. Joseph's order.

INDUSTRIAL HYGIENE AND OCCUPATIONAL DISEASE

Abstracted by Drs. E. R. Hayhurst, R. P. Albaugh and P. M. Holmes.

Use of Army Masks in Industry.—A very complete discussion of the use of army gas masks in industry is given by Majors Fieldner and Fogler in this article which is also illustrated. The features of the mouthpiece the eyepiece made of triplex glass, the canister containing special absorbent mediums for various kinds of gases, the superiority of the Tissot type mask, the length of time in minutes the standard army canister will protect against gases, 29 different gases to which workers are exposed in many different industries,—all of these are discussed with unusual clearness. Most gases are caught in a mixture of charcoal and soda-lime. There are some notable exceptions however. The organic substances like gasoline, benzol, carbon bisulphide, carbon tetrachloride, chlorpicerin, thiophosgene, ethyl chloride, anilin vapor and similar compounds require an all-charcoal canister. An all-soda-lime canister is recommended for hydrocyanic acid, hydrogen chloride, hydrogen sulphide, sulphur dioxide, carbon dioxide and other acid gases. The mixture canister is best for phosgene and chlorine gases. Ammonia fumes require a special chemical absorbent such as kupromite, which was developed at the American University Experiment Station. Satisfactory masks for carbon monoxide have unfortunately not been produced. One very important reason is that in such atmospheres there is often not sufficient oxygen to support life. Hence in the long list of industries in which men are likely to be "gassed," the mask has no advantages. An oxygen breathing apparatus will always be necessary. Very finely divided particles such as tobacco smoke or sulphur trioxide smoke are not completely removed by the standard army canister, but these were successfully used in some processes against sulphur dioxide and arsenical dust at the Anaconda Copper Mining Company at Butte, Mont.; also in connection with fumigating fruit trees and warehouses with hydrocyanic acid gas. Possibly the largest commercial use is in connection with the manufacture of chlorine and where chlorine is used or produced in various processes. Respiratory apparatus is of three classes: "pig snout" type for protection against solid and liquid particles, gas masks, and oxygen or air breathing apparatus. An efficient dust protector with low breathing resistance can be made by attaching a large paper filter to a Tissot face mask. Gas and dust protection can be combined in the same mask. "The selection of the proper kind of protective appliance for irrespirable atmospheres should never be made without the advice of an expert, who has investigated the conditions under which the appliance is to be used."—*A. C. Fieldner and B. B. Fogler, Journal of Industrial Hygiene*, June, 1919, pp. 69–75.

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Lead Poisoning—A Brief.—This one-page article is, nevertheless, very comprehensive. It discusses the prevalence, the mode of entrance into the body, symptoms, diagnosis, and treatment of lead poisoning. Severe intoxications often show basophilic degeneration of the red blood corpuscles and increased blood pressure. The writer implies that the less severe forms may not. The term "lead absorption" should be abolished. It is misleading. It has no more standing than would the term "alcoholic absorption." It is unfortunately being used as a blind to cover up real lead poisoning. Lead poisoning exists not because there is lead in the system but because it is not being eliminated fast enough, and there are symptoms of intoxication resulting. Treatment is symptomatic. Stop the exposure. Morphine may be given to relieve colic, and enemas and cathartics to relieve constipation. Potassium iodid has several uses. The electrolytic bath has been quite conclusively proved incapable of removing lead from human organs and tissues, but its psychical value cannot be doubted.—R. P. Albaugh, M. D., *Modern Medicine*, June, 1919, p. 137.

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Curative Power of Work.—Occupational therapy in civilian hospitals, the establishment of work shops in the same, work as a curative agent, and the use of such service in vocational placement are discussed. Cases who imagine they are sick, true heart disease cases, and various medical, surgical, and maternity cases have great possibilities as has been demonstrated.—G. C. Robinson, *Modern Medicine*, June, 1919, pp. 159–162.

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Work as a Therapeutic Agent.—This is discussed by Hawes in his *Collective Abstract on Tuberculosis for the Year 1918*. In the past, tuberculosis patients have been placed in the fresh air and reclining chairs and converted from the self-respecting consumptive working person to a fairly healthy loafer. At the Municipal Sanitorium at Otisville, New York, each patient is expected to do some useful work, apparently with excellent results. After the

sanitorium treatment should come the farm colony, after which the patient returns to his home.—John B. Hawes, II (Boston), *Modern Medicine*, June, 1919, pp. 175–181.

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Employers Must Have Plant Hospitals.—Massachusetts has been busy of late putting into effect the provisions of an amendment of the state labor laws enacted in 1918 requiring every employer employing over 100 persons to provide facilities for the treatment of persons injured or taken ill on the premises, and also suitable and sanitary facilities for heating or warming food to be consumed by employee. The minimum requirements adopted by the State Board of Labor and Industry for plant hospitals are described in detail.—*Hospital Management*, July, 1919, Chicago, p. 56.

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Principles and Practice of Safety.—A 72-page book for technical schools and universities for teaching the subjects indicated has been prepared covering safeguards and safe practices in school shops, with a syllabus of special lectures, and other features touching upon the industrial relations of the subject.—*National Safety Council*, Chicago.

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Hard Lives of Food Handlers.—A study covering 1,220 employees, 779 of whom were women working in dining-rooms, kitchens, pantries, and soda fountains was made in Cincinnati. The hours of work vary from six to nine daily. Violations of the nine-hour day and six-day week were frequent. A definite time for meals was reported only in 26 places of the 71 employing women in any capacity. In the remaining 45, employees eat when they can, usually standing, as few places provide chairs and tables for kitchen help.—Consumers' League of Cincinnati, *Bulletin No. 8*, June, 1919.

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Ohio Passes Advanced Laws.—In addition to the Hughes' Act creating 102 special health districts with full-time officials in the state, with many possibilities for the advancement of industrial hygiene, laws were also enacted extending further protection to minors; to females in certain occupations; requiring wash rooms at coal mines; protecting motormen and conductors against dust, wind, storm, and low temperatures; restricting the use of salamanders or similar burners in enclosures; and greatly improving health conditions in dry cleaning and dyeing establishments, the latter establishing fire protection. Another law which gives the state commissioner of health authority to define and classify hospitals and dispensaries, to require their registration, and annual reporting to the State Department of Health on specified forms.

Du Pont Medical Service.—Not many have realized the extent of the medical service of this organization during the war period. Beginning with the summer of 1914, on the outbreak of the war in Europe, it became necessary to increase the number of factories and to extend the older ones. The number of employees increased to about 150,000, and as many of them were construction laborers hurriedly concentrated in isolated and unprepared territory, the sanitary problem at once assumed large proportions. The medical director, Dr. W. G. Hudson, an old New York City health department man, soon organized an efficient sanitary service along well established modern lines; and this has been so effective that not a single outbreak of contagious disease has occurred to interfere with the production of munitions. This, of course, excepts the influenza epidemic, of which the plant communities had their share. But even here its approach was foreseen, and the organized preparation for handling it resulted in better medical service to those who became afflicted than the limited supply of physicians in surrounding communities permitted. On November 11, 1918, there were about a dozen hospitals, at the different establishments, and a total personnel of physicians and surgeons of more than 130.

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Muscular Tonus in Relation to Fatigue.—In a preliminary report the authors state that they found that in subjects doing relatively strenuous work during the day, or where long hours were spent in work, there was usually a decrease in the tonus in the evening as compared with the morning condition. This was more pronounced when the subject was losing rest (sleep). Tonus was better on days following a good night's sleep. Evidence was thus obtained of cumulative fatigue effects. Strenuous work of short duration was usually followed by an immediate decrease in tonus. In subjects doing relatively little work with plenty of sleep, the evening tonus was frequently greater than that observed in the morning.—A. H. Ryan, Sarah Jordan, A. B. Yates, *Public Health Reports*, July 25, 1919, pp. 1622–23.

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Disability as a Cause of Unemployment.—The percentages unemployed on account of disability (sickness, accident, and old age) were fairly constant from quarter to quarter. The highest percentage reported as unemployed because of disability, on record during the period, was 1.9 and the lowest was 0.7. The more usual percentage was 1.2, and the mean percentage for the entire period was 1.3.—*Massachusetts Bureau of Statistics, Labor Bulletin No. 126*, p. 30.

Rhythm in Industry.—The median speed of a series of operations was chosen as the typical speed. From this the average deviation by the worker was obtained, and this divided by the median gave the percentage deviation, or the coefficient of dispersion. The smaller this coefficient, the more rhythmical the operation or operator. In the experienced worker on a hand screw machine, the coefficient was as low as 2.74 per cent. In the inexperienced worker it was as high as 8.34 per cent. In the foot-press type of operation the coefficient was high, indicating less rhythm. Neither fatigue nor distraction seemed to interfere with the rhythm. There is, however, an optimum speed for rhythm. In summary, rhythm (1) relieves attention and thereby fatigue, (2) relieves fatigue by making metabolism more uniform, (3) it may mask fatigue in which case the output curve may be maintained in spite of fatigue, and (4) it may increase or decrease accident hazard, according to the case.—A. H. Ryan and P. S. Florence, *Public Health Reports*, July 25, 1919, pp. 1621–22.

Industrial Democracy.—The term means representation of organized interests. All employees' organizations are not examples of democracy. Such organizations are of three types: (1) Welfare or shop committees which are merely advisory organizations, (2) employers' unions in which collective bargaining is recognized,—the principle being confined to one company and the management not excluded from the meetings, and (3) trade unions, the ordinary labor unions. Shop committees are popular just now and are analogous to patent medicine, since they are applied because of their supposed general healing powers. There are two kinds of labor relations: (1) The personal relations and (2) the economic collective relations. The first means handling the human element that goes into production with the same understanding of the feelings, instincts, prejudices, and characteristics of the workers as the management has of its materials and mechanical forces. Personal relations cover hiring, selection, placement, training, promotion, treatment by foremen, health, safety, recreation, lunches, rest periods, etc. These questions are not essentially controversial in nature; they do not involve conflicting interests and they have to be settled by good management and scientific experts rather than by democratic decisions of majorities. The second group, the economic relations, present controversial issues and cannot be settled by any technical expert. The author insists upon pointing out that merely welfare committees attached to a management is not democracy, and when an employer thinks or pretends that such is the case, he is preparing trouble for himself.—W. M. Leiserson, *Working Conditions Service, U. S. Department of Labor*, May 23, 1919, *pamphlet*, 15 pp.

Rhode Island Limits Health Hazards in Textile Mills.—A new statute forbids the use of suction shuttles in textile mills, provides a safer supply of drinking water, prohibits common drinking cups and common towels. Virginia forbids common drinking cups in factories and stores and public places. Massachusetts requires employers to furnish suitable and sanitary facilities for warming food if the employees desire same.—*Labor Legislation of 1918, Bulletin No. 257, U. S. B. of L. S.*, June, 1919, p. 14.

Cost of Clean Clothes in Terms of Health.—Investigations were made in forty-two steam laundries in New York City, with 3,024 employees of whom 715 were men and 2,309 were women. The types of laundries, processes of work, conditions of work in each process, hours, wages, number of employees in each process with age, nationality, and family status, home and living conditions, etc., were studied. Tuberculosis and nose and throat diseases were found much more commonly in those who handled soiled linen (sorters and markers) than in the other group. There was also some evidence of the contraction of trachoma and diphtheria. Diseases of the lungs were prominent in men employed in the wash rooms. Foot treadle work and long standing caused menstrual troubles in 37 per cent of the women,—the same group showing a high percentage of flat-foot. Thirty per cent of the markers and sorters had flat-foot and 28.5 per cent of the ironers. The flat-foot rate for all workers was 17½ per cent; 26.7 per cent had varicose veins; and 20 per cent were anæmic. The custom of long hours for three or four days a week followed by a let-up undoubtedly contributes to the diseases and the large labor turnover. The cause is long hours, which in many laundries is simply mismanagement on the part of the employer. A large proportion earn less than a living wage. The bulletin is illustrated.—Louis I. Harris and Nelle Swartz, *Department of Health and Consumers League*, New York City, 96 pp.

Occupational Diseases Reported in Connecticut.—One locality, Bridgeport, and one disease, fulminate intoxication, constitutes the substance of the report. There were 216 fulminate cases reported for the biennium 1917–1919 and 39 forms of other occupational diseases.—*Twenty-eighth Report, Connecticut Bureau of Labor Statistics*, Hartford.

Hours, Output, and Health of Wool Workers.—Limited evidence was to the effect that the adoption of a 54-hour schedule resulted in unimportant effects on the health of workers. Anthrax has seldom been traced to the industry in this country although in Great Britain it is of increasing occurrence. The accident hazard is fairly high. The carbonizing and dyeing processes present special health hazards and appear to require consideration in the hours of work. There is a distinctly high death rate from tuberculosis and pneumonia, which may be related to the high temperatures and humidity characteristic of some processes in the industry. In spite of outside factors it is so high as to indicate that conditions within the industry are a contributing factor.—National Industrial Conference Board (15 Beacon Street, Boston), *Research Report No. 12.*

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British Comment on Compulsory Health Insurance.—After an experience dating from 1912, no group affected by the workmen's health insurance would think for a moment of going back to the old conditions. Perhaps the greatest immediate service of health insurance in England was its disclosure of hundreds of thousands of previously unreported and, therefore, unattended cases of illness. Disclosure of the large amount of occupational disease and tuberculosis, which hitherto had been receiving the most inadequate recognition, has called attention to both working and housing conditions. Physicians, who originally opposed the legislation, later learned its advantages not only as a means of giving them greater opportunities to relieve physical distress but also as a method of certain payment for services rendered. Their incomes were in the majority of cases increased. Any system of social health insurance to be economically conducted must be universal, *i. e.*, compulsory in form.—Margaret Bondfield, *American Labor Legislation Review*, Volume IX, No. 1, June, 1919, pp. 202–203.

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Occupational Diseases in Pennsylvania.—A great deal of lead work is done. The notoriously dangerous lead trades have been made much safer. The less dangerous ones have hardly changed at all. Carbon monoxide is probably the closest rival of lead, and poisoning from it is yearly on the increase. Brass poisoning, as often described, is merely lead poisoning but some workers suffer from the sublimed zinc oxide in making brass. Mercury in felt hat making is a fairly large industry in the state. Opportunities for arsenic poisoning are present in the ores used in some industries. Various industrial gases of poisonous character are frequent. Coal tar products, including explosives such as T. N. T. are, or were, made on an extensive scale. While industrial poisons constitute a fairly full list, they are by no means so important in producing disease as are certain physical agents such as strain, dust, heat, and injurious light. Many things in the textile industry bring about a high rate of tuberculosis. Coal miners suffer particularly from lung diseases other than tuberculosis. (A table is given comparing the mortality of two coal mining cities—Scranton and Wilkes-Barre—with the remainder of the state.) In three years there were reported 49 cases of anthrax, 8 of them women. There is no compensation for occupational diseases in Pennsylvania. Industrial poisoning is typically chronic, exceptionally acute, yet there is far more doubt in the chronic than in the acute case. There are probably twenty or more cases of the chronic for every case which is acute.—Alice Hamilton *Labor Review, U. S. B. of L. S.*, Vol. IX, No. 1, July, 1919, pp. 170–180.

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Occupational Diseases Compensable in Connecticut and Wisconsin.—The Connecticut law includes all industrial diseases which are due to "causes peculiar to the occupation and which are not of a contagious, communicable, or mental nature." The Wisconsin law, which is patterned after the British act, enumerates twenty specific diseases,—poisoning from lead, mercury, phosphorus, and arsenic; a number of diseases due to poisonous dusts, gases, and fumes; also anthrax, hook worm disease, nystagmus, glanders, compressed air illness, and several miners' diseases.—*Labor Review, U. S. B. of L. S.*, Vol. IX, No. 1, July, 1919, page 186.

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Pennsylvania Health Insurance Commission.—The commission's work was limited because of its appropriation of only $5,000. There are constantly more than 385,000 employees suffering from illness Pennsylvania stands highest of any state in the percentage of men rejected for physical reasons in the draft of April, 1917. Of her young men between 21 and 31 years of age, 46.67 per cent were rejected,—the average for the country as a whole was 29.11 per cent. The annual wage loss to employees on account of sickness, estimated at $2 per day, is at least $33,000,000. Investigation showed that as the family income increases the amount spent on medical care increases. Large numbers of men and women actually sick are at work every day. Four large establishments state that it costs from $30 to $50 to hire and train new workmen. A synopsis of other factors of the report is given.—*Labor Review, U. S. B. of L. S.*, Vol. IX, No. 1, July, 1919, pp. 220–226.

PUBLIC HEALTH LABORATORY NOTES

Abstracted by ARTHUR LEDERER, M. D.

Analysis of Human Milk.—Mixed samples of milk taken before and after nursing, or the entire amount of one breast, must be taken to obtain a characteristic sample of milk for analysis. It should be drawn at 9 or 10 a. m. Accurate methods of chemical analysis must be used. Clinical laboratory tests cannot be depended on because of their inaccuracies.—Fritz B. Talbot, *Jour. A. M. A.*, 73, 662 (1919).

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Effect of Agglutinins.—The glycolytic action of the living B. coli may be markedly weakened by agglutinin, and the agglutinin is able so to change the cell membrane of the bacteria that their endoenzyme can permeate it. Neither agglutinin nor hemagglutinin alters the permeability of bacteria and red blood corpuscles for glucose. The resistance of the blood corpuscles to hypotonic solutions is slightly decreased by agglutinin or hemolysin.—B. Fryimoto, *Jour. Immunology*, 4, 67 (1919).

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Hemolytic Complement and Antibodies.—A method for the collection of plasma is described which has yielded uniform success and simplified this difficult technical problem. This technic involves the use of dried sodium oxalate after a method devised by Meeker, and a paraffined tube. Sodium oxalate in the proportion of 0.001 gm. per cubic centimeter of blood prevents coagulation and does not exert any injurious influence on hemolytic complement or antibodies; in amounts of 0.004 gm. per cubic centimeter of blood sodium oxalate may prove to be anticomplementary. The oxalated plasmas of normal and syphilitic persons and normal and immunized rabbits contains hemolytic complement in the same or somewhat greater amounts than the corresponding serums. The oxalated plasmas of syphilitic persons contain the same amounts of Wassermann antibody as the corresponding serums. The oxalated plasmas of persons and rabbits contain the same or occasionally slightly greater amounts of such natural antibodies as antisheep hemolysin and typhoid agglutinin as the corresponding serums. The oxalated plasmas of normal and immunized rabbits contain as much specific and nonspecific complement fixing substances and specific bacterial and hemagglutinins as the corresponding serums. The general conclusion reached by Watanabe is that hemolytic complement and natural and immune antibodies exist free and performed in the circulating plasma of the blood.—S. Watanabe, *Jour. Immunology*, 4, 77 (1919).

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Production of Antihuman Hemolysin.—Vedder has found that the hemolysin is either a globulin or is precipitated with the globulins; more probably the former hypothesis is correct for the total hemolytic power of a serum is contained in the globulins whether precipitated out by salting or by dialysis. In this case, therefore, an antigen consisting of a specific albumin produces an antibody consisting of a specific globulin.—E. B. Vedder, *Jour. Immunology*, 4, 141 (1919).

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Frozen Complement in the Wassermann Reaction.—Frozen guinea-pig complement one week old, whether composed of the mixed serums of three guinea pigs or of the serum from one guinea pig usually gave a little stronger positive result with the Wassermann reaction than did the same complement while fresh. At the age of two weeks the frozen complement gave results that were nearly identical with the results obtained with the fresh complements. After two weeks the frozen complement gradually lost strength which seemed to be more rapid in mild weather than in very cold weather.—E. H. Ruediger, *Jour. Inf. Dis.*, 25, 269 (1919).

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Different Races of Pneumococci.—The agglutinating power of bacteria is the criterion of the race; the power of fixation of complement, on the other hand, is the criterion for the species. There may be other antigens, but those responsible for agglutination and fixation predominate. They are not peculiar to any one bacterium: Of eighty-three specimens of streptococcus tested, eighty-two agglutinated the pneumococcus I and II, and one the pneumococcus I; the cholera vibrio agglutinated both strains, while the pneumococcus II was agglutinated by meningococci, staphylococci, typhoid and dysentery bacilli, and slight agglutination for pneumococcus III was evident with some streptococci. They found in negroes a pneumococcus IV, "such as the Americans list as purely negative," which in 8 per cent showed average agglutination, but in 40 per cent it displayed extremely pronounced agglutinating powers, hyperagglutinability.—M. Nicolle and E. Debains, *Bull. Acad. Med. Paris*, 81, 843 (1919).